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Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

JANUARY, 1965

VOLUME 62, NUMBER 1

Scientific Articles

RENAL TRANSPLANT IN A COMMUNITY HOSPITAL, William R. Harrin, M.D.; Andrew D. Mitchell, M.D., and Raymond W. Stockton, M.D. 25

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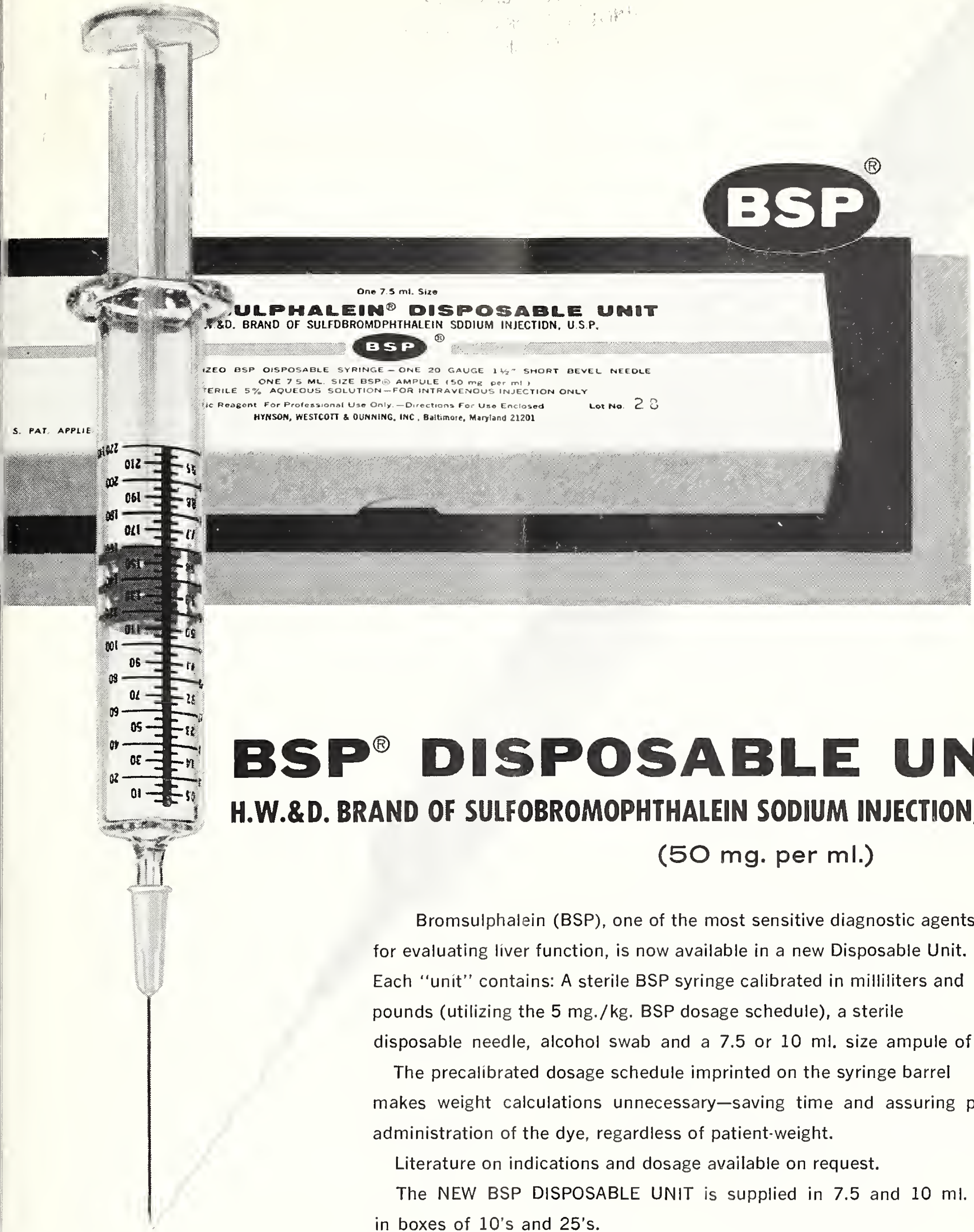

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Hospital 'Reps' Discuss Mutual Problems

Problems of rising costs, the nurse shortage, possible "medicare" legislation and current trends in health services occupied prime attention at the 42nd annual meeting of the Missouri Hospital Association. The session was held November 18, 19 and 20 in Kansas City.

"Doctors and patients are not the only ones who worry about rising medical costs. Hospitals share that worry," said Elmer V. Paul, the newly installed president of the Association. Paul is administrator of Burge-Protestant Hospital in Springfield and succeeded Robert E. Adams, executive director of Research Hospital in Kansas City, as head of the state hospital organization.

In reply to those who criticize the management of hospitals, Paul pointed out that there is a dual responsibility for such institutions. Although a hospital must use the best business methods available in its operation it cannot be run like a business. "Every service must be geared to and measured by what is best for the patient," he said.

Leonard T. Furlow, M.D., president of Missouri State Medical Association, told the hospital administrators that the medical profession opposes federal "medicare" plans which offer medical care under Social Security for "all the elderly, regardless of whether they can afford it or not. We support programs which aid those who need help."

Dr. Furlow said the State Medical Association is anxious for the Hospital Association to "join in supporting the establishment of a vendor medical assistance program for the near-needy." This would be an extension of the present Kerr-Mills program in Missouri.

U. S. Representative Richard H. Ichord told the meeting that he does not consider recent "medicare" proposals as socialized medicine, any more than he considers the Social Security program proof that we have a socialized state. The Congressman predicted that some type of medical-care-for-the-aged plan will be approved by Congress in 1965, probably as a part of Social Security. He predicted, however, that the program will contain safeguards to prevent an unlimited drain on present Social Security funds and to protect traditional patient-doctor-hospital relations.

Stanley W. Martin, executive secretary-treasurer of the Ontario (Canada) Hospital Association asserted that the majority of Canadians apparently are in favor of government sponsored hospital insurance. He said that such a program, involving federal, provincial and local financing, has been in existence for five years. "Generally speaking, the medical profession has accepted and approved the program, considering it beneficial to all concerned," said Martin.

Another speaker, Missouri State Senator Albert M. Spradling, Jr., told the convention that the big problem facing the state legislature in 1965 will be Congressional redistricting. He predicted that the state lawmakers will delay any action on Kerr-Mills expansion until they see what Congress is going to do on "medicare."

The director of the state Division of Welfare, Proctor N. Carter, reported that more than 13-million dollars has been paid to Missouri hospitals during the past five years under the Kerr-Mills program. He said that 146 hospitals, 85,150 patients and 715,270 days of hospitalization were involved. Carter also observed that the average payment per patient has climbed to $200 as the scope of the program has been broadened over the five year period.

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MISSOURI STATE MEDICAL ASSOCIATION

Preliminary Program

107th Annual Session—1965

Chase-Park Plaza Hotel, St. Louis

April 4, 5, 6, 7

Sunday, April 4

12:00 noon Registration of Delegates.
1:30 p.m. House of Delegates meeting, opening session.
3:00 p.m. Reference Committee meetings.

Monday, April 5

8:00 a.m. Registration.
8:30 a.m. Breakfast and scientific session.
  What's New in Viruses?—John W. Berry, M.D., St. Louis, moderator.
  Fundamentals of Virus Structures and Replication—Maurice Green, Ph.D., St. Louis.
  Relationship of Viruses to Cancer—Joseph L. Melnick, Ph.D., Houston, Texas.
10:30 a.m. Intermission to view exhibits.
11:00 a.m. Scientific session.
  Some Aspects of Vascular Diseases in Daily Practice—M. S. DeWeese, M.D., Columbia.
11:30 a.m. Scientific session.
  (To be announced. Sponsored by Missouri Diabetes Association.)
12:00 noon Luncheon and scientific session.
  Information Please! Review of morning program with morning speakers present for questions and additional comment.—C. Arden Miller, M.D., Kansas City, Kansas, moderator.
12:00 noon Maternal Welfare Luncheon.
12:00 noon Fifty-Year Club Luncheon.
2:00 p.m. Scientific session. (Medical.)
  Abdominal Pain—Blaine Hibbard, M.D., Kansas City, moderator.
  Abdominal Pain of Obscure Origin—(Speaker to be announced. Sponsored by Missouri Society of Internal Medicine.)
  Vascular Studies of the Large and Small Bowel—Alexander R. Margulis, M.D., San Francisco, Calif. (Sponsored by Missouri Society of Radiology.)
  Treatment of Abdominal Angina—E. S. Crawford, M.D., Houston, Texas.
2:00 p.m. Scientific session. (Surgical.)
  Limited Surgical Treatment of the Complications of Duodenal Ulcer Disease with Preservation of the Gastric Secretory Inhibitory Mechanisms—Edgar J. Poth, M.D., Galveston, Texas. (Sponsored by Missouri Surgical Society.)
2:30 p.m. Scientific session. (To be announced.)
3:00 p.m. Scientific session.
  The Dizzy Patient—G. O'Neil Proud, M.D., Kansas City, Kansas.
3:30 p.m. Intermission to view exhibits.
4:00 p.m. House of Delegates meeting, second session.
5:30 p.m. Reference Committee meetings.

Tuesday, April 6

9:00 a.m. Scientific session.
  The Bleeding Patient—C. Rollins Hanlon, M.D., St. Louis, moderator.
  X-Ray Negative Upper GI Bleeding—Irving B. Brick, M.D., Washington, D. C.
  Technical Factors in Control of Bleeding at Operation—Vallee Willman, M.D., St. Louis.
  (Fourth panelist and title to be announced.)

(Continued on page 8)

MSMA Preliminary Program (cont'd.)

10:30 a.m. Intermission to view exhibits.
11:00 a.m. Scientific session.
  Presentation by winner of the Missouri University Medical Alumni Award for 1965.
11:30 a.m. Scientific session.
  Sex and the Role of the Practicing Physician—William H. Masters, M.D., St. Louis.
12:00 noon University of Missouri Alumni Luncheon.
1:30 p.m. Scientific session.
  (To be announced. Sponsored by MSMA Committee on Anesthesiology.)
1:30 p.m. Economics session.
  (To be announced. Sponsored by MSMA Committee on Medical Economics.)
3:00 p.m. Intermission to view exhibits.
3:30 p.m. Scientific session. (Sponsored by Missouri Heart Association.)
  Surgical Management of Acquired Valvular Heart Diseases—Arthur C. Beall, Jr., M.D., Houston, Texas.
  (Title to be announced.)—Noble O. Fowler, M.D., Cincinnati, Ohio.
  (Third panelist and title to be announced.)
3:30 p.m. Scientific session.
  Acute Cervical Spine Trauma—Richard E. Lord, M.D., St. Louis, moderator.
  The Cervical Disk—Earl P. Holt, M.D., St. Louis.
  Psychiatric Mechanisms in Post-Traumatic Neck Pain—Jackson Smith, M.D., Chicago, Ill.
  Methods of Treatment—J. William Fielding, M.D., New York, N. Y.
5:00 p.m. Intermission to view exhibits.
7:30 p.m. Banquet honoring Past Presidents of MSMA.
  Speaker—Vernon E. Wilson, M.D., Dean and Director of the University of Missouri School of Medicine.

Wednesday, April 7

7:30 a.m. House of Delegates meeting, breakfast and final session.

(This is the preliminary program for the 1965 Annual Session of MSMA and is subject to later changes and revisions.)

THE MISSOURI SOCIETY OF MEDICAL TECHNOLOGISTS

1965 Annual Meeting

Chase-Park Plaza Hotel, St. Louis
April 4, 5, 6, 7

Sunday, April 4

At St. John's Mercy Hospital.
  Afternoon—Business meeting, Missouri Society of Medical Technologists.
  Evening—Business meeting, Missouri Association of Blood Banks.

Monday, April 5

At Stockholm Room, Park Plaza.
  Morning—Aspects of Modern Blood Banking. (Sponsored by Missouri Association of Blood Banks.)
  Afternoon—Problems of Hematology and Coagulation.

Tuesday, April 6

Morning—Specialized techniques in Isotope Studies and Chromosome Analysis.
Afternoon—Microbiology and Related Topics.

Wednesday, April 7

Morning—New techniques and concepts in Clinical Chemistry.

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Notes of interest from Here . . . . and There

"The Production of X-Rays and the Interaction of Radiation and Matter" is the title of a new slide series produced by the American College of Radiology. The series of 30 color slides has accompanying commentary illustrated with prints of the slides. It is available from the College office for the price of $7.00. The slides are designed for teaching radiology residents, X-ray technicians, research assistants, medical students and other interested groups the theory of X-ray production, according to Armand E. Brodeur, M.D., associate dean of St. Louis University School of Medicine and chairman of the College's committee on public education. Helen Smith, medical illustrator at St. Louis University, produced all of the art work for the series.

Physicians and surgeons have long felt a need for a practical guide to physical therapy that cuts through the tedious research and technical data of little interest to the practicing physician. Such a book will soon be available in the *Physician's Physical Therapy Manual,* written by Robert Shestack, Ph.G.R.P., B.P.R. and Edward W. Ditto, III, M.D., and published by Prentice-Hall. This manual offers the practicing physician and surgeon finger-tip information on how and when to use physical therapy modalities, making it easy to check on the results that may be expected from any modality and to find the data required for a full prescription. Various forms of treatment are covered specifically and thoroughly, as well as the various conditions which respond to physical therapy.

The American Medical Association and the American Bar Association have joined forces to sponsor the 1965 National Medicolegal Symposium on March 11-13 at the Dunes Hotel in Las Vegas. Some 1,200 physicians and attorneys are expected to attend. The biennial Medicolegal Symposium, sponsored solely by the AMA in the past, was considered to be the outstanding meeting of its kind. Participation by the ABA promises an even more informative program. According to Robert B. Throckmorton, AMA general counsel, topics to be covered include the common goals and ideals of law and medicine, the medical witness, current litigation, and tax problems. Trial vignettes will be used to dramatize courtroom situations.

The economic and social make-up of a community determines its demand for hospital facilities and should be the basis for hospital planning, according to a report published by the American Hospital Association. The report, *The Demand for General Hospital Facilities,* by Gerald D. Rosenthal, Ph.D., assistant professor in economics at Harvard University, is based on a research project conducted at Harvard and supported in part by the U. S. Public Health Service. Dr. Rosenthal challenges present methods of planning hospital facilities, particularly the use of uniform bed-population ratios to determine need. He is critical, for example, of the ratio of 4.5 beds to 1,000 population applied by the federal Hill-Burton hospital construction program. Through the use of economic research techniques, Dr. Rosenthal found "a greater element of consumer choice in medical care expenditures than has been generally acknowledged."

(Continued on page 14)

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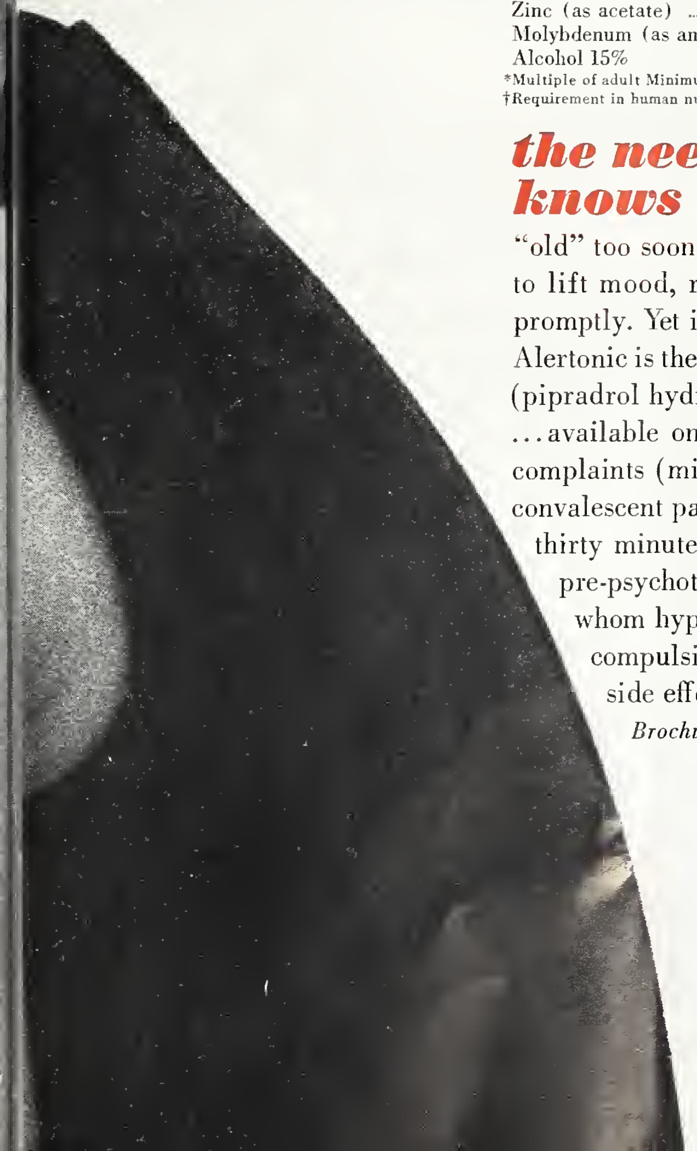

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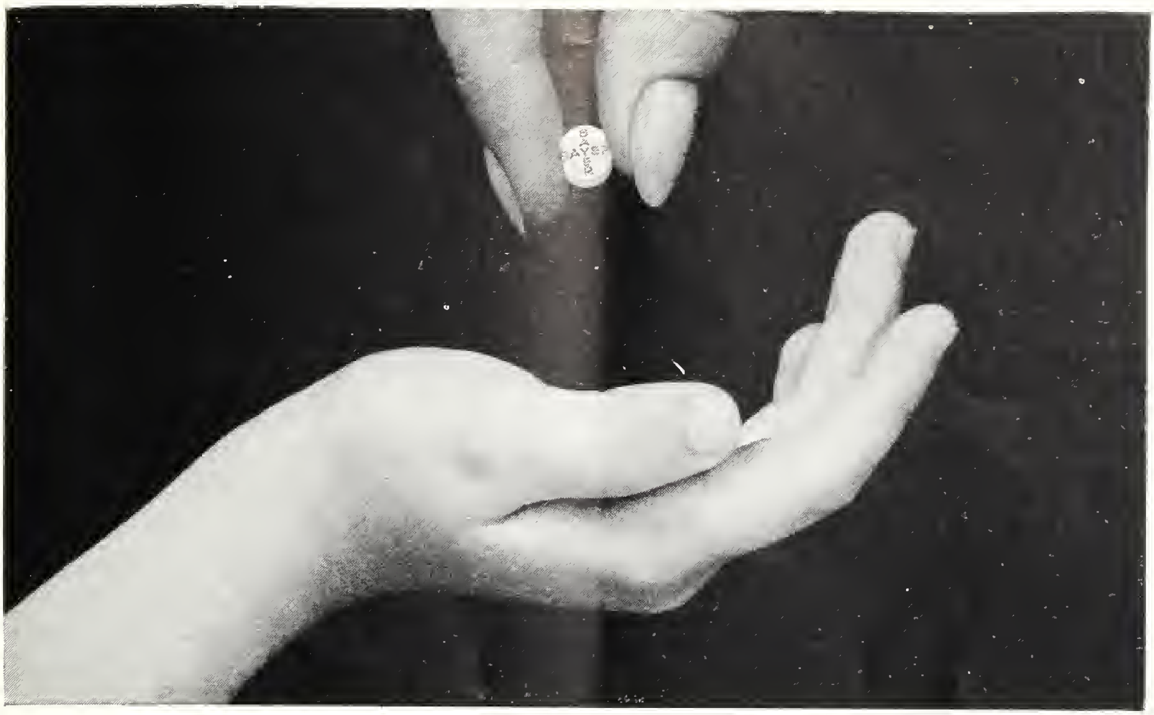
medical melange (cont'd.)

Another milestone in cancer detection has been recognized, with announcement by the University of Alabama Medical Center of a new tool designed to diagnose the presence of a malignancy located at the top of the uterus. After five years of experimentation, the Jet-Washer, developed by Dr. Clark Gravlee and his associates at the University of Alabama Medical Center, is capable of detecting upper-uterine cancer before the malignancy becomes symptomatic. The device permits a thorough washing of the uterine cavity with a saline or other sterile solution. The solution is then examined for presence of malignant cells. The idea of uterine washings is not new. However, in the past, such washings presented the danger of spreading a malignancy, should one exist. As the solution rushed through the uterus, some of it would inevitably flow through the fallopian tubes, carrying with it malignant cells. Dr. Gravlee's invention works on the principle of negative pressure. A syringe capable of creating a vacuum is employed which forces the fluid from one container to flow into the uterus, then draws it back into a second tube for examination. Because of the negative pressure, the uterus is not expanded, and the fallopian tubes remain closed; thus the danger of spreading a malignancy is nil.

Can fingerprint analysis, a highly effective tool in scientific criminal investigation, be a valuable instrumentality for the early detection of neurological abnormalities among newborn infants? That is what the Public Health Service's Neurological and Sensory Disease Service Program will try to determine in a study announced by Surgeon General Luther L. Terry. The Neurological and Sensory Disease Service Program is currently conducting an investigation into the patterns of palm and fingerprints of patients with various neurological disorders, who are located in three Virginia institutions. These disorders include congenital abnormalities such as hydrocephalus and mongolism. According to Dr. Fred Rosner, Program Epidemiologist, impetus for this study came from recent reports in medical literature concerning fingerprints abnormalities that occur in various diseases. Unusual patterns have been reported in patients with organic brain syndrome, neuroses, various congenital and genetic diseases, Wilson's disease, diplegia, congenital heart disease, and schizophrenia.

The sixth and seventh papers in the series of "Guides to the Evaluation of Permanent Impairment" are now available. The "Guides" have been developed and prepared by the AMA's Committee on Rating of Mental and Physical Impairment, and the newest additions to the series concern the digestive system and the peripheral spinal nerves. These guides, like all others in the series, have been designed primarly for use by physicians. They are, however, of interest and use to all concerned with the medical, administrative or judicial aspects of programs for the disabled. Request for copies of the new publications should be addressed to: The Committee on Rating of Mental and Physical Impairment, 535 North Dearborn Street, Chicago, Ill. 60601.

Additional clinical evidence of good results obtained with Atabrine (quinacrine hydrochloride) in symptomatic treatment of malignant effusions is cited by a group of Los Angeles investigators in *Surgery* (118:991, 1964). "Excellent" responses to Atabrine were obtained in 33 of 52 patients with malignant effusions of the pleural and peritoneal cavities, according to Drs. Donald B. Rochlin, Charles R. Smart, Donald E. Wagner and Antonio R. M. Silva, of the University of California's department of surgery. The drug's toxicity fell within an acceptable range. An important treatment problem in such patients is the frequent need to tap the pleural and peritoneal cavities in order to draw off fluid, thereby permitting less labored breathing. The major benefit of Atabrine's symptomatic activity is in making it possible to tap less often.



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County Society News

FIRST DISTRICT

COUNCILOR,
JOSEPH FISHER, M.D., ST. JOSEPH

Grand River County Medical Society

Pat Barelli, M.D., Kansas City, spoke at a dinner meeting of the Grand River Medical Society and its Woman's Auxiliary at the Strand Hotel in Chillicothe, November 12. After a social hour and dinner the ladies retired to their own program while the doctors enjoyed Dr. Barelli's discussion on, "Your Nose Problems and Mine."

A short business session preceded adjournment.

Jack Vinyard, M.D., *Secretary*

Buchanan County Medical Society

One hundred physicians, attorneys and their wives attended the annual joint meeting of the Buchanan County Medical Society and the St. Joseph Bar Association, November 4, at the Hotel Robidoux. Presiding jointly at the event were the presidents of the two groups, Dr. William B. Rost of the Medical Society and Mr. Robert E. Douglas of the Bar Association. Mrs. Ralph Bohnsack, Brookfield, President of the Auxiliary to the Missouri State Medical Association and Dr. Bohnsack were special guests at the meeting.

Following a social period and dinner, members of the Auxiliary retired to their own business meeting and to hear a talk by Mrs. Bohnsack.

The speaker at the meeting of physicians and attorneys was Mr. Ray Herschman, President of the St. Joseph Chamber of Commerce, who talked on "Guidelines for St. Joseph's Improvement." He discussed several bond issues, soon to be put before the people of St. Joseph for vote, and emphasized the importance of the passage of these issues to the future of the community.

Irwin Rosenthal, M.D., *Secretary*

SECOND DISTRICT

COUNCILOR,
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

The Chariton-Macon-Monroe-Randolph County Medical Society held its regular monthly dinner meeting at the Woodland Hospital and Clinic library. The principal speaker was Dr. Russel Crider, surgeon at St. Joseph Hospital, St. Charles, whose topic was, "Gastric Resection for Peptic Ulcer." He discussed resection of the stomach which is usually done for severe stomach ulcers. He has done 325 resections, which is a considerable number for one surgeon to perform.

He stated that he believes there is an unusually high number of ulcers in his vicinity because of the extreme tension that people in his area work under.

He operates and removes most of the stomach where there is complete obstruction to the outlet of the stomach, when there is intractable bleeding, for severe persistent pain, and for a stomach ulcer that will not heal after adequate medical treatment has been given. He also removes a stomach if there is a large benign tumor present, chiefly as a preventive for cancer. He has had 85 per cent to 90 per cent good results.

He has made considerable investigation into stomach freezing and says all reports indicate that the results are not successful. The ulcer pain is alleviated for only a short time and then returns more severe than ever. Final results of stomach freezing show just as many of these cases eventually have to be operated as in stomach ulcers not so treated. There are additional complications from the freezing process itself.

New officers for the society were elected for 1965. They are as follows: President, L. E. Huber, M.D., Moberly; Vice President, F. A. Barnett, M.D., Paris; Secretary-Treasurer, Robert Hasson, M.D., Moberly.

Members present were: Drs. D. E. Eggleston and J. E. Campbell, Macon County; F. L. Harms and D. D. Stuart, Chariton County; Josephine Baker, A. P. Rowlette, J. Will Fleming, Jr., Thomas S. Fleming, C. C. Cohrs, L. E. Huber, Robert Hasson, P. V. Dreyer and C. C. Smith, Randolph County.

J. Will Fleming, Jr., M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR,
PAUL ROTHER, M.D., ST. CHARLES

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society members and their wives was held at the Goldview Inn at the St. Charles Golf Course, December 1. Following a

(Continued on page 18)

tence, substituting therefor the word, 'October,' and (2) deleting that part of the first sentence which follows the word, 'year.' The amended first sentence would then read, 'The officers of the society shall be elected at the October meeting of each year.'"

The chairman of the Nominating Committee, Dr. R. B. Wray, Nevada, was asked to have the report of his committee ready for the December meeting. A motion was made and seconded and unanimously approved that the society contribute the sum of $100.00 to the Student Loan Fund of the Missouri State Medical Association (Missouri State Medical Foundation). Announcement was made that the next meeting of the society would be in Butler, on December 10. This will be the annual business meeting of the society and election of the officers for the coming year will be held. There being no further business the meeting was adjourned.

Roy W. Pearse, Jr., M.D., *Secretary*

Henry, Johnson, Pettis, Saline, Lafayette-Ray County Medical Societies

A joint dinner meeting of the Henry, Johnson, Pettis, Saline, Lafayette-Ray County Medical Societies and the doctors' wives was held at the Holiday Inn in Sedalia, November 18. The evening activities began with a social hour, followed by dinner and the program.

Following dinner, the ladies held a separate meeting with the program furnished by Mr. and Mrs. Harry Finks of Clinton, who spoke and showed slides of their two years recently spent in the Peace Corps, in the Philippines. Mr. and Mrs. Finks are graduate students now at the Central Missouri State College in Warrensburg.

The scientific program presented to the doctors was given by Harry Stoeckle, M.D., Department of Pediatrics, Missouri University Medical School. His subject was, "Rheumatic Fever Today." This program was sponsored by the state-wide Advisory Committee on Rheumatic Fever and similar programs are being presented before various county medical societies over the entire state.

In spite of inclement weather, 75 people attended, including doctors, their wives and guests. The Pettis County Medical Society served as host, with the Auxiliary of the Clinton Society furnishing the program for the ladies.

E. M. Braverman, M.D., *Secretary*

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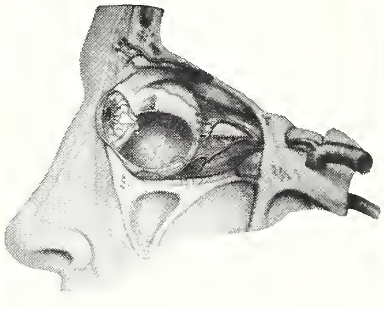

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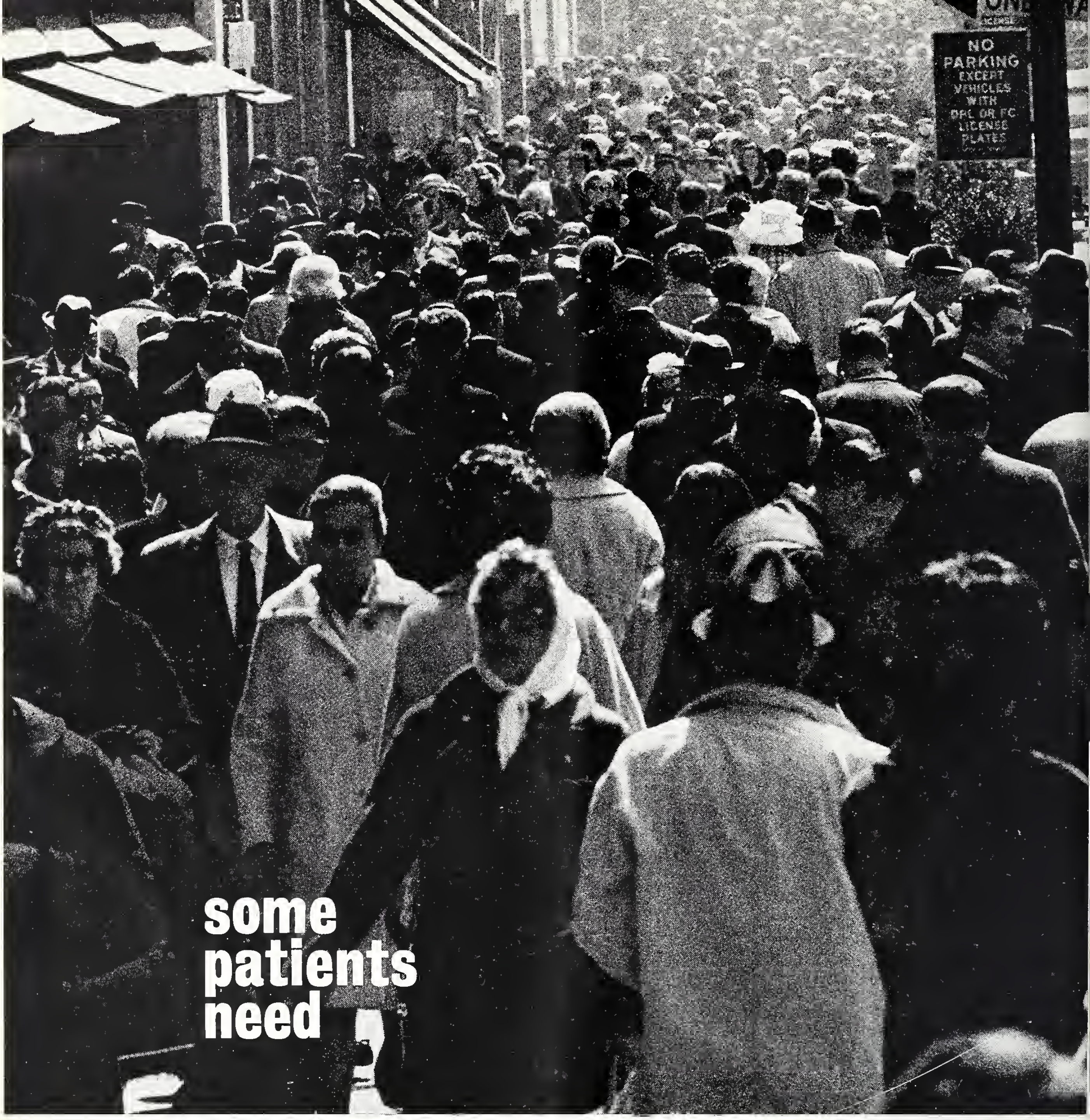
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Ramblings of the Field Secretary

More than 70 physicians from all sections of the state attended a cancer detection postgraduate program, at the Lodge of the Four Seasons, Lake Ozarks, Nov. 13-14. The attractiveness of the meeting place may well have had its influence on the large attendance. A number of doctors' wives came with their husbands, and from all indications the ladies enjoyed a most pleasant two-day vacation.

The scientific program Friday and Saturday morning was developed under the auspices of the Postgraduate Medical Education Committee of the University of Missouri Medical School. Representatives of other organizations with a special interest in cancer detection served as consultants to the Committee on this project. A one-year grant from the USPHS to the Medical School to promote postgraduate medical education in cancer detection and diagnosis made the program possible. A continuation of the grant is anticipated, and this will enable the Postgraduate Committee to furnish local cancer detection programs, patterned to the needs and desires of county medical societies. At the Lake Ozarks meeting the officers and program chairmen of the county medical societies, and others present, were given a brochure of various types of programs and speakers available for local society meetings. To secure a desired program a medical society is urged to contact Lester Wolcott, M.D., Chairman, Postgraduate Medical Education Committee, University of Missouri Medical School, Columbia, Missouri.

Since the November session, all county medical societies in the state have been mailed one of the brochures.

EIGHTH DISTRICT

COUNCILOR,
DOYLE C. MCCRAW, M.D., BOLIVAR

Ozarks Medical Society

The Ozarks Medical Society held its November meeting on November 10 at the Sands Motel in Aurora. The program was presented by Philip J. Marco, M.D., Psychiatrist of the University of Missouri Medical School, who spoke on, "Psychotropic Drugs."

A discussion session followed his talk.

Paul B. Anderson, M.D., *Secretary*

NINTH DISTRICT

COUNCILOR,
E. A. STRICKER, M.D., ST. JAMES

Mid-Missouri Medical Society

A dinner meeting of the Mid-Missouri County Medical Society and the doctors' wives was held November 12, at the Shepherd of the Hills Motel-Restaurant in Lebanon.

The evening festivities began with a social hour followed by dinner and then the scientific program. The speaker for the evening was Herbert L. Warres, M.D., urologist, of Springfield, who spoke on, "Urological Infections." A question and answer discussion period followed his interesting presentation.

M. K. Underwood, M.D., *Secretary*

Members of Henry, Johnson, Pettis, Saline, Lafayette-Ray County Medical Societies listen intently to Dr. Harry Stoeckle's presentation on "Rheumatic Fever Today."

TENTH DISTRICT

COUNCILOR,
W. D. ENGLISH, M.D., CARDWELL

Butler-Ripley-Wayne County Medical Society

The Butler-Ripley-Wayne County Medical Society met at the Holiday Inn, Butler, November 4. Following dinner, the scientific program was given by E. T. Hansbrough, M.D., of the Doctor's Hospital staff in Poplar Bluff. He presented a program entitled, "Uncommon Carcinomas—Presentation of Cases."

W. D. Robertson, M.D., *Secretary*

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1. Kunin, C. M. et al.: J. Clin. Invest. 38:1950, Nov., 1959.

Volume 62, Number 1—January, 1965

Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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WILLIAM R. HARRIN, M.D., ANDREW D. MITCHELL, M.D.,
and RAYMOND W. STOCKTON, M.D., *Kansas City*

Renal Transplant in a Community Hospital

Case Report

The case presented is that of a 26-year-old female with terminal renal insufficiency. The mother was the kidney donor. The recipient expired from septicemia on the 23rd postoperative day. Post mortem examination of the transplanted kidney did not reveal any signs of rejection. The use of the Normal Lymphocyte Transfer (NLT) to predict the host reaction may be a useful guide in selection of the donor. The use of immunosuppressive drug therapy is discussed.

Dr. Harrin is a Resident in Urology at St. Luke's Hospital and at Wadsworth Veterans Hospital. Dr. Mitchell is Staff Urologist at St. Luke's, Consultant at Wadsworth and Children's Mercy Hospital and Assistant Clinical Professor of Urology at K. U. Medical Center. Dr. Stockton is Staff Urologist at St. Luke's, Consultant at Children's Mercy and Kansas City VA Hospital and Assistant Clinical Professor of Urology at K. U. Medical Center.

In spite of rather discouraging results of renal homotransplantation, the hope of prolongation of life has prompted another attempt.

Case Report

The patient presented here received a renal homograft in a community hospital. A 26-year-old white female, was admitted November 21, 1963, to St. Luke's Hospital with renal insufficiency from chronic glomerulonephritis. The patient's history of renal disease began at the age of five when she had an episode of acute glomerulonephritis. She was asymptomatic until age 20 and did not consult a physician in the interim. During her first two pregnancies at ages 20 and 21, she exhibited mild hypertension and persistent albuminuria. She manifested good health following the second pregnancy until age 23, when she again became pregnant. During the third pregnancy she was toxic with severe hypertension, albuminuria and anarsarca. Following this, she exhibited evidence of progressive renal failure. During the two years prior to admission, she developed progressive anemia, marked anorexia, weakness, nausea and vomiting. The blood urea nitrogen rose progressively until the admission level of 146.

She was admitted to attempt to correct her acidosis, treat the anemia with transfusions, and to consider her for some form of chronic dialysis or possible renal transplant. After considerable deliberation, it was thought that the patient would be a good candidate for renal transplant. A survey of the family was made. The mother, age 53, was elected to be the donor. Complete typing of both donor and recipient revealed all major and minor blood groups compatible.

On December 6, 1963, the patient was taken to surgery, and under local anesthesia, a right retrograde pyelogram was performed (fig. 1). This revealed a small contracted right kidney. The patient was placed on IV fluids on December 7, 1963, because of nausea and vomiting. Congestive heart failure with pulmonary edema suddenly developed. She was rapidly digitalized with Cedilanid IV, positive pressure oxygen was administered via Bennett respirator, and rotating tourniquets were applied. The patient responded slowly. On December 8 and 9, she had grand mal seizures. The signs of congestive failure slowly improved.

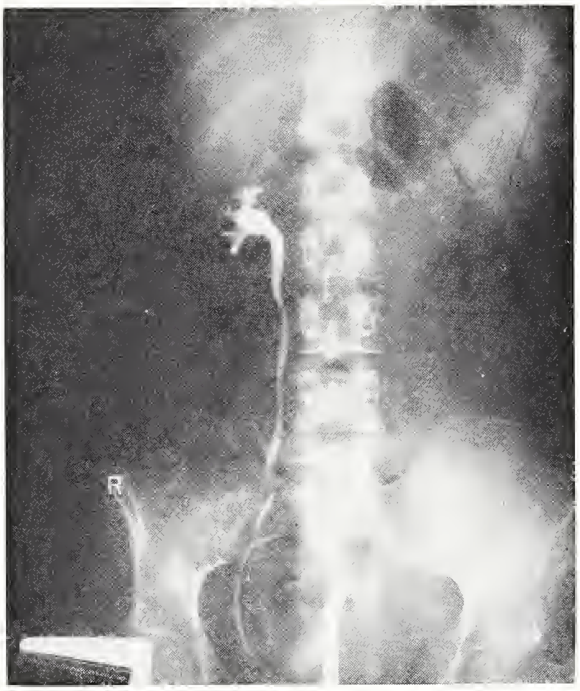


Fig. 1 Right retrograde pyelogram of the recipient reveals a small contracted kidney.

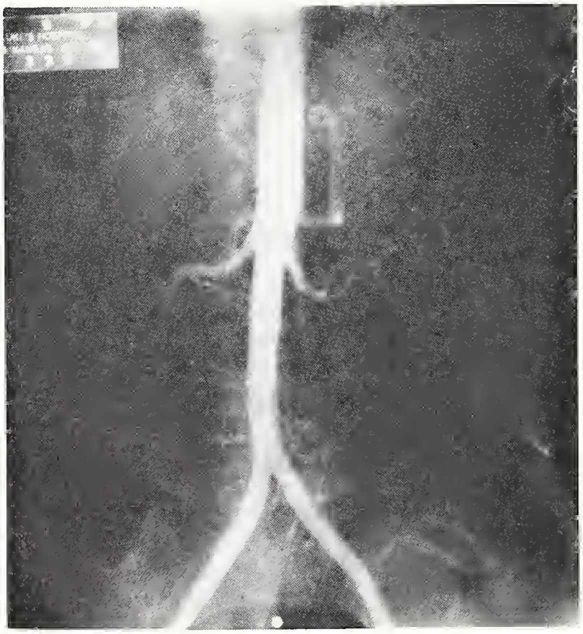


Fig. 2 Transfemoral renal arteriography on the donor reveals a single blood supply to both kidneys.

The donor was admitted December 8, 1963. The following day a transfemoral renal arteriography revealed a single blood supply to both kidneys (fig. 2). A skin test using the recipient's lymphocytes (Normal Lymphocyte Transfer)[1] did not reveal any reaction.

On admission, the patient's blood urea nitrogen was 142 mg per cent with a creatinine of 25 mg per cent, CO_2 combining power 13.3 mEq/L, calcium 3.5 mEq/L, and potassium 4.5 mEq/L. She was given multiple transfusions which corrected her anemia, but there was no change in her electrolyte levels. In view of this poor response it was decided that she would be a better surgical risk if she were placed on the artificial kidney. The dialysis was started on December 10, 1963, and was maintained for approximately 6 hours. There was some improvement in the electrolyte levels. The urea level decreased to 76 mg per cent, the creatinine to 10 mg per cent and the CO_2 combining power 22.4 mEq/L. Clinically the patient exhibited some improvement, but still was considered only a fair operative risk.

The renal homotransplant was performed on Friday the 13th, transplanting the left kidney of the mother into the patient's right iliac fossa. The capsule of the kidney was stripped away. The renal artery was anastomosed end-to-end to the right hypogastric artery, and an end-to-side anastomosis of the renal vein to the iliac vein was performed. After completion of the vascular anastomosis there was immediate efflux of urine from the transplanted kidney. The ureter was implanted into the bladder near the right ureteral orifice. The patient tolerated the operative procedure well, and the urinary output was more than 2 liters in the first 24 postoperative hours. The blood urea nitrogen on the first postoperative day was 80, decreased to 38 mg per cent on the third postoperative day and to 31 mg per cent on the fourth day.

To combat rejection of the kidney graft, 6-Mercaptopurine was started on the recipient preoperatively, and continued in the postoperative period. She received 200 mg daily. Hydrocortisone 100 mg daily was administered. On the first, third, fifth, and seventh postoperative days, she received 150 rad. to a port restricted to the transplanted kidney. The patient was also placed in a secluded portion of the intensive care unit and sterile nursing techniques were used. Rotating antibiotics were given daily. Hemoglobin, hematocrit, and white counts were taken daily to follow the effect 6-Mercaptopurine. She was maintained on Digitalis and given Pronestyl intermittently because of an arrhythmia. She seemed to be responding very well during the first postoperative week and was sitting up in bed.

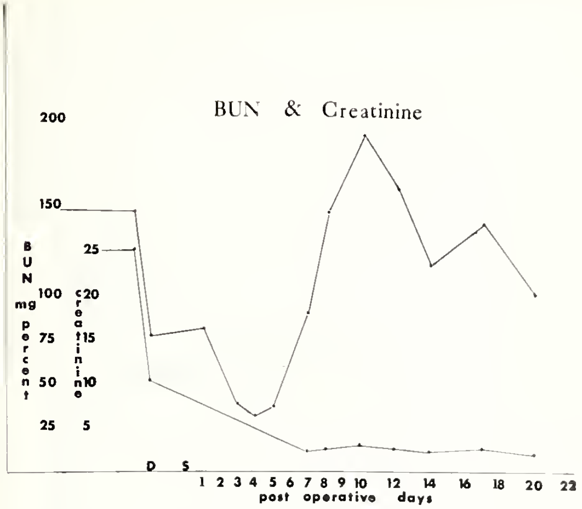


Fig. 3 Relationship of the blood urea and creatinine levels throughout her hospital course. D = hemodialysis, S = day of surgery.

The Foley catheter was removed on the seventh postoperative day, but following this, she drained large amounts of urine from the wound and prevesical drain. The Foley catheter was reinserted, but there was a vesico-cutaneous fistula which was later confirmed by cystoscopic examination on December 26, 1963. Tarry stools were noted on the sixth postoperative day. With the bone marrow already embarrassed from the chronic azotemia, the further insult of 6-Mercaptopurine on the marrow required multiple transfusions in the form of packed cells. Her blood urea nitrogen progressively rose after the seventh postoperative day, but the creatinine level was only moderately elevated at 2.7 mg per cent. It was our opinion that this elevated BUN could be explained by rapid breakdown of red cells, tissue reabsorption from the vesicocutaneous fistula and the subsequent gastrointestinal hemorrhage.

Cystoscopic examination was performed on December 26, 1963, which revealed the ureteral implant to be intact. There were two small fistulae in the line of the bladder closure. Indigo Carmine was given IV and, in 2½ minutes there was prompt excretion of concentrated dye from the transplanted kidney. The abdominal wound, which was not healing well, was debrided and the skin edges "freshed" and resutured. On December 27, 1963, 6-Mercaptopurine was discontinued because the white blood count was down to 4,350. Also, at the time, the patient developed bilateral parotitis. On December 30, 1963, radium applicators were applied to the right parotid gland in order to decrease some of the intraoral swelling.

A diastolic gallop was noted on January 2, 1964, with moist rales in the right lung. Blood studies revealed hypochloremic alkalosis. The blood urea nitrogen at this point was 101 mg per cent and the creatinine was within normal limits (2 mg per cent). Serum chlorides were 91.3 and CO_2 combining power 41.2 mEq/L. She was given ammonium chloride in an attempt to correct this alkalosis. The patient had no further evidence of gastrointestinal bleeding.

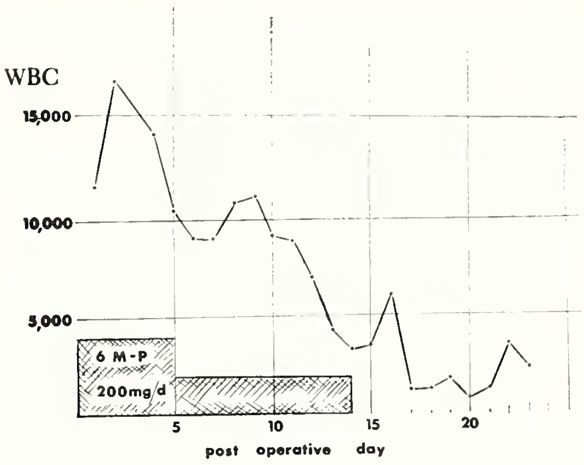


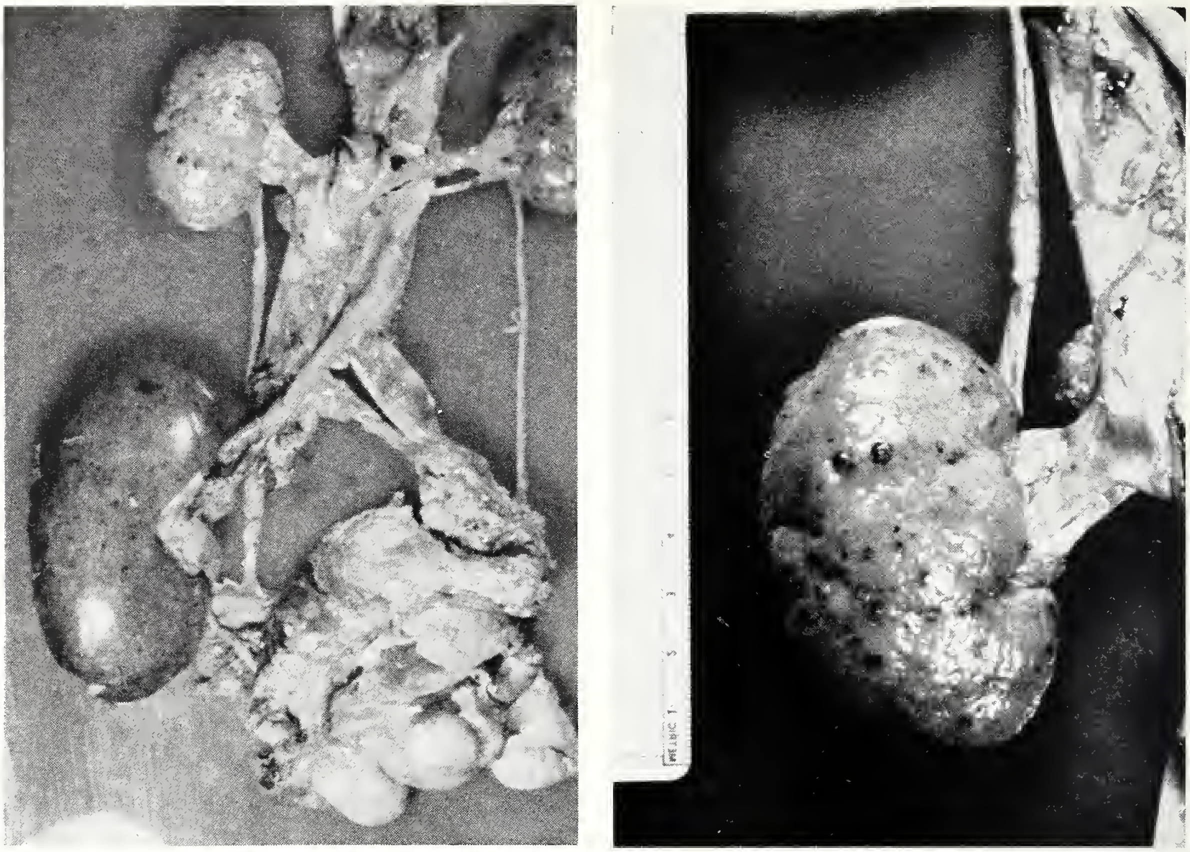
Fig. 4 Relationship of the white blood count and the dosage of 6-Mercaptopurine.

The patient became tachypneic on January 5, 1964, the twenty-third postoperative day, with a respiratory rate 36 and a pulse of 112. The temperature became elevated for the first time in her postoperative course; 102 degrees. The condition steadily worsened with bilateral coarse pulmonary rales and a disastolic gallop rhythm with a rate of 200. The patient suddenly expired at 10:05 p.m. on January 5, 1964, the terminal event being accompanied by gross hematemesis. In spite of rotating antibiotics throughout her postoperative course, it was felt that she developed a septicemia with bronchopneumonia and secondary congestive failure.

Postmortem examination revealed the vascular anastomosis to the transplanted kidney to be intact. Grossly and microscopically (figs. 5-9), there was no evidence of rejection. In all respects the homograft appeared normal except for early acute pyelonephritis. The patient's kidneys were scarred, contracted, and findings were consistent with chronic glomerulonephritis with superimposed acute pyelonephritis. The lungs were extensively involved with acute hemorrhagic pneumonia. There were multiple microscopic abscesses throughout the lungs, kidneys, and heart.

Discussion

The use of the Normal Lymphocyte Transfer (NLT) as suggested by L. Brent, Ph.D. and P. B. Medawar, F.R.S., to predict the host reac-



Figs. 5 and 6 Gross postmortem findings.

tion, may be another guide in the selection of the donor.

As outlined by these investigators, 20 ml. of blood were withdrawn from the recipient and defibrinated by the use of a glass rod and glass beads. The defibrinated blood was mixed with an equal amount of dextran and incubated for 30 minutes. The mixture separates into a supernatant layer containing most of the lymphocytes. The supernate was centrifuged for ten minutes. The sediment, rich in lymphocytes contained excessive numbers of red blood cells. This second sediment was resuspended in 1 ml. and incubated 45 minutes. Most of the red cells settled out to form a third sediment, which was discarded. The supernate was centrifuged. The cellular deposit was finally resuspended in 1 ml. of Ringer Solution.

The donor received .2 ml. intradermal injection. The recipient also received .2 ml. of the lymphocyte preparation to rule out a non-immunological reaction. The skin tests were read at 24 and 48 hours and there was no evidence of reaction.

The actual technique of renal transplantation is not difficult. As we all realize, the problem is one of rejection of the graft. Once this immunological barrier has been overcome, the successful transplantation of the kidneys will be possible. At present the most commonly used drugs to suppress the immunological response are either 6-Mercaptopurine or Imuran (1-Methyl, 4-Nitro, 5-Imidazolyl Thiopurine).[2, 3] As seen by the photomicrograph of the transplanted kidney at postmortem examination there was no evidence of rejection. Fig. 4 shows the relationship of the 6-Mercaptopurine dose schedule to the white blood count. In retrospect the discontinuance of the 6-Mercaptopurine at an earlier time may have avoided the marked depression of the recipient's defense mechanism which probably contributed to her septicemia, pneumonia, and finally her demise. Starzl *et al*[4] points out that it is not desirable to suppress the white blood count during the early postoperative period so that the appearance of rejection would coincide with the development of leukopenia.

The effectiveness of the therapy is not directly related to the degree of bone marrow depression.

The use of steroids masked the early signs of septicemia. No temperature elevation occurred until the day of death. The use of strict isolation[5] technique and using a sterile room fitted with positive pressure ventilation and ultraviolet irradiation, may have helped to avoid the septicemia.

The authors acknowledge the technical assistance of Dr. H. W. Benoit and Dr. J. E. Crockett for cardiac management.

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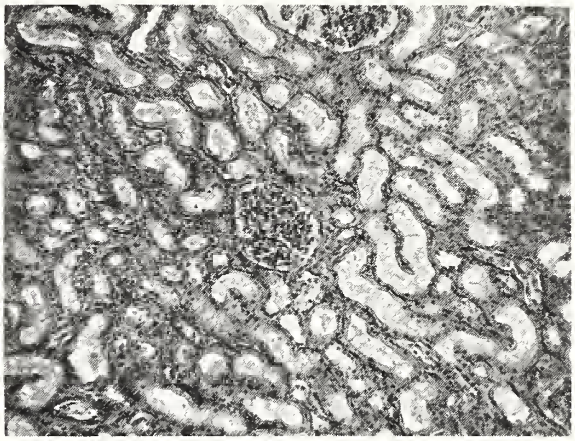

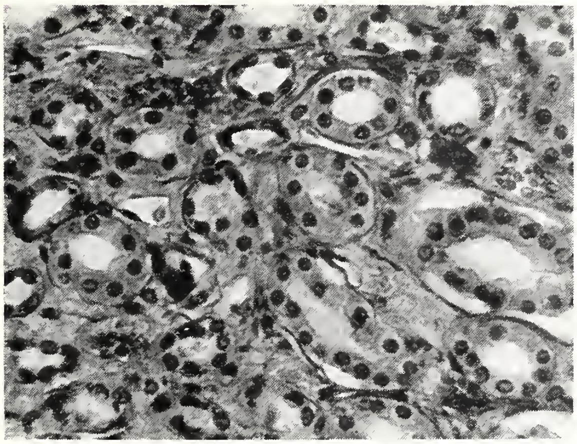

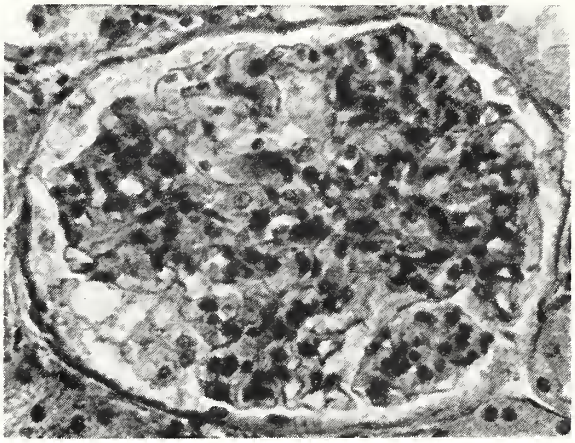

Figs. 7, 8, and 9 Photomicrographs of the transplanted kidney do not reveal any evidence of rejection.

Regular washing with the antibacterial skin cleanser pHisoHex was able to reduce sharply the incidence both of "staph" infections among newborn babies and breast abscesses contracted by their mothers during and after the hospital stay, according to an article in the *British Medical Journal* (2:414, 1964). Breast abscesses are nearly always caused by staphylococcus. In most cases, mothers acquire the infection from their breast-feeding infants, states Dr. V. D. Plueckhahn, an Australian physician. The marked drop in "staph" infections among the babies, and the subsequent reduction in maternal breast abscesses, is attributed to regular use of pHisoHex by hospital nurses, mothers and babies.

JAMES S. NELSON, M.D., ***St. Louis***

New Approaches to Neuropathology

THE RELATIONSHIP BETWEEN variations in brain function (such as mental retardation, memory defects, hallucinations, dementia, etc.) and any accompanying biochemical or structural alterations in the central nervous system is vague. The definitive or prophylactic treatment of at least half the future patients who will be hospitalized by the Division of Mental Diseases rests upon a clarification of this relationship.

Members of the Missouri Institute of Psychiatry are investigating intensively certain aspects of brain structure and function. Included in the research functions of the Institute is a neuropathology laboratory which will be utilizing a variety of newer methods for precisely detecting and delineating alterations in brain structure and chemistry. In order to stimulate interest in neuropathology and the new approaches now available for the study of brain disease, this review has been written.

The measurement and localization of enzymes or other chemical constituents in tissue can be studied in at least five different ways: (1) by microspectography, (2) by x-ray microradiography, (3) by the "slide" (staining) histochemical technique, (4) by the differential centrifugation procedure, and (5) by the quantitative histochemical technique (Lowry and Robins). The first two procedures have as their major disadvantage the lack of characteristic absorption spectra for many chemical substances of biological importance, especially enzymes. In contrast, the latter three potentially have available all the analytic methods of biochemistry. The "slide" histochemical technique suffers from not being quantitative, as well as from the presence of diffusion artifacts with respect to localization. It is useful, however, as a screening procedure in the initial studies of a given tissue constituent. When differential centrifugation is used, localization is also imprecise since each intracellular component from one kind of cell is inextricably mixed with the same component from other kinds of cells present, e.g., in brain the nuclear fraction will contain nuclei from nerve cells as well as glia.[1, 2, 3]

The gross, histologic, and cytologic variation in the central nervous system requires the use of analytic methods by which regional structural differences may be correlated with the assay of the substance under investigation in order to obtain an accurate representation of the quantity and distribution of an enzyme, substrate, or other chemical in the tissue. These requirements are met by the use of frozen-dried 20 micron thick sections of brain from which the tissue element under examination (nerve cell, nucleus, cortical layer, etc.) may be easily dissected free hand under low magnification. Enzymes and substrates within the dissected nerve cell, cortical layer, etc., may then be measured utilizing the special microchemical and ultramicrochemical methods developed by O. H. Lowry[1, 2] and Eli Robins.[3] As little as 5×10^{-19} moles of diphosphopyridine or triphosphopyridine nucleotide can be measured easily with these techniques.[4] The sensitivity of these methods can be extended to measure one molecule of substrate.[1] It is, therefore, possible to measure the activity of virtually any enzyme or the amount of virtually any substrate accurately and reproducibly at the molecular level by coupling the reaction involving the chemical under investigation to one which leads to oxidized or reduced diphosphopyridine or triphosphopyridine nucleotide. With these ultra-micro methods the localization and quantity of a variety of substances can be determined precisely even in a tissue with the structural complexity of brain.

For many diseases of the nervous system an experimental model does not exist. It is necessary to study the disease or process in the human, clinically, through changes in the constituents of body fluids, or by elucidating anatomic changes in biopsy or autopsy material. Biochemical methods are uncommonly used to study autopsy tissue and somewhat more often, though still infrequently, in the examination of biopsy specimens. While it is true that irreversible chemical changes take place in tissues after

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A brief review of some of the newly available laboratory methods of studying brain disease. Dr. Nelson is Assistant Professor of Pathology, St. Louis University School of Medicine, and Neuropathologist for the Missouri Division of Mental Diseases. His paper is intended to "stimulate increased clinical interest and optimism with regard to neurologic and psychiatric problems."

death, it is important to realize that these changes follow an orderly progression and the rate of change varies from a few seconds to days. Consequently, a variety of substances can be measured in tissue obtained at autopsy, and the values can be taken to represent the levels of these substances during life or such values interpolated from a previously defined rate of change after death. Robins and Smith[5, 6] studied the activity of enzymes from the layers of rabbit cerebellum by quantitative histochemical methods of post-mortem intervals of two and six hours. In some instances fever or uremia had been induced in the rabbits prior to death. With one exception (phosphofructokinase), all of the enzymes showed a sufficient degree of stability and absence of diffusion artifact for six hours post-mortem to indicate that valid quantitative results could be obtained for these enzymes using material collected within the usual post-mortem interval of human autopsies. It is evident that sophisticated biochemical investigation of brain tissue obtained at autopsy is possible. Additional investigations of the type described by Robins and Smith under varying physiologic conditions are necessary to extend the application of quantitative histochemical methodology to the measurement of other substances in brains obtained at autopsy.

Although the use of classical neurohistologic methods is an essential step in the study of a disease process in the brain, nevertheless, this methodology frequently yields little information about disease at the molecular level. For example, there is only an approximate correlation between the values obtained by chemical measurement of myelin lipids and the results obtained using the Weigert-Pal techniques for staining myelin.[7] Several investigators have pointed out that many of the commonly used myelin stains reflect the presence of only one of the components of the myelin sheath.[8, 9, 10] Consequently, alterations in myelin chemistry can go undetected by usual histologic investigations. The necessity of complementing anatomic studies with modern biochemical methods of analysis is apparent. With the use of such a correlative approach, many more neurologic diseases and disease processes will be precisely characterized.

SUMMARY

Excellent biochemical methods are available for investigating the chemistry and pathology of the nervous system. These methods make it possible to localize chemical constituents within individual cells, groups of cells, or groups of nerve fibers, so that structural and functional correlates may be obtained. Moreover, subtle changes in disease states, not evident by the usual morphologic methods, become apparent through the use of these methods in the study of diseased brains. These methods can be used satisfactorily with brains obtained at autopsy within the usual post-mortem interval (six hours) or perhaps longer. It is hoped that this short review of some of the newly available laboratory methods of studying brain disease will stimulate increased clinical interest and optimism with regard to neurologic and psychiatric problems.

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A two-year study of NegGram, a new antibacterial agent for urinary tract infections, indicates that the drug is valuable against gram-negative strains and is safe for both adults and children. This is the conclusion of a team of Louisiana investigators as reported in the *Louisiana Medical Society Journal* (116:363, 1964).

MARSHALL F. EIDEX, M.D.,
LOUIS J. ROSENBAUM, M.D., ***St. Louis***

Tuberculosis of the Ascending Colon Mimicking Carcinoma

Case Report

Tuberculosis of the gastrointestinal tract is an uncommon disease and usually is difficult to diagnose in the absence of pulmonary tuberculosis. The authors report on a specific case, and conclude that a proper diagnosis might have been made preoperatively if all factors had been considered in their possible, although not usual, context. Dr. Eidex is a Resident in Medicine at Jewish Hospital and Dr. Rosenbaum is a Resident in Ophthalmology at Barnes Hospital.

Today, tuberculosis of the gastrointestinal tract is an uncommon disease, especially difficult to diagnose in the absence of pulmonary tuberculosis. This patient is reported as an unusual example of tuberculosis presenting with anemia and gastrointestinal bleeding, interpreted radiographically as carcinoma of the ascending colon.

Case Report

A 60-year-old Negro woman, gravida one, para zero, abortus one, was admitted for the first time to the medical service of this hospital on October 17, 1963, complaining of two episodes of rectal bleeding beginning six days prior to admission. She had a seven month history of anorexia with ten pound weight loss, and fleeting sharp abdominal pains which were aggravated by food, but were not associated with nausea, vomiting, diarrhea, constipation, melena, chills, fever, or night sweats. In the hospital clinic, proctoscopic examination revealed gross bright red blood originating above the maximum point of penetration.

One year prior to admission, the patient had an episode of bright red rectal bleeding, but was not hospitalized. In August, 1963, the patient was admitted to the hospital with hemoglobin of 5.8 gram per cent and weakness. At that time, the history of rectal bleeding was not obtained and repeated stool guaiacs were negative. Blood studies showed iron 53 micrograms per cent, unsaturated iron binding capacity 342 micrograms per cent, mean corpuscular volume 98 cubic microns, mean corpuscular hemoglobin 29 micromicrograms, mean corpuscular hemoglobin concentration 30 per cent. Bone marrow aspiration was nondiagnostic with erythroid hypoplasia and plasmacytosis of a mild degree. Gastrointestinal X-rays were not taken, and chest film showed mild left ventricular enlargement but no pulmonary disease. It was felt that the anemia was secondary to "some chronic disease." She also had an E. coli urinary tract infection which was sensitive to and treated with tetracycline. She was transfused with four units of blood to hemoglobin 11 grams per cent and was discharged feeling well.

Also of significance in her past history was a seven year history of diabetes mellitus treated for the past five years with Orinase, one gram daily. In 1956 she had a cholecystectomy. For the past one year she had hypertension. With the exception of some dyspnea on exertion, two pillow orthopnea, pedal edema, and occasional nocturia, she did well until her present hospital admission.

Physical examination revealed a well developed obese Negro woman appearing weak and in some distress. Mucous membranes were pale. Temperature was 98.6, pulse 80 supine, increasing to 100 on sitting, respirations 20, and blood pressure was 170/90 supine. A grade 1/6 systolic murmur was heard along the left sternal border without a gallop or rub. Auscultation of the chest revealed no rales or rhonchi. There was no costovertebral angle tenderness, and the abdomen was soft without masses or tenderness. Two plus pitting pretibial edema was present.

Admission laboratory examination showed a hemoglobin of 7.2 grams per cent, hematocrit 23 volume per cent, with 18,960 white blood cells, with 90 segs, 8 lymphs, 2 monocytes; urea nitrogen 79 milligram per cent, fasting blood sugar 234 milligram per cent, total protein 5.6 gram per cent, albumin 2.6 gram per cent; globulin 3 gram per cent. The patient received five units of blood over the next 48 hours, and her hemoglobin rose to 12.2 gram per cent and hematocrit 38 volume per cent. Urinalysis revealed pH 5.6, specific gravity 1.005, 3 plus protein and clumps of white blood cells. After the urine culture grew E. coli with concentration greater than 300,000 colonies per cubic centimeter, the patient was treated with tetracycline.

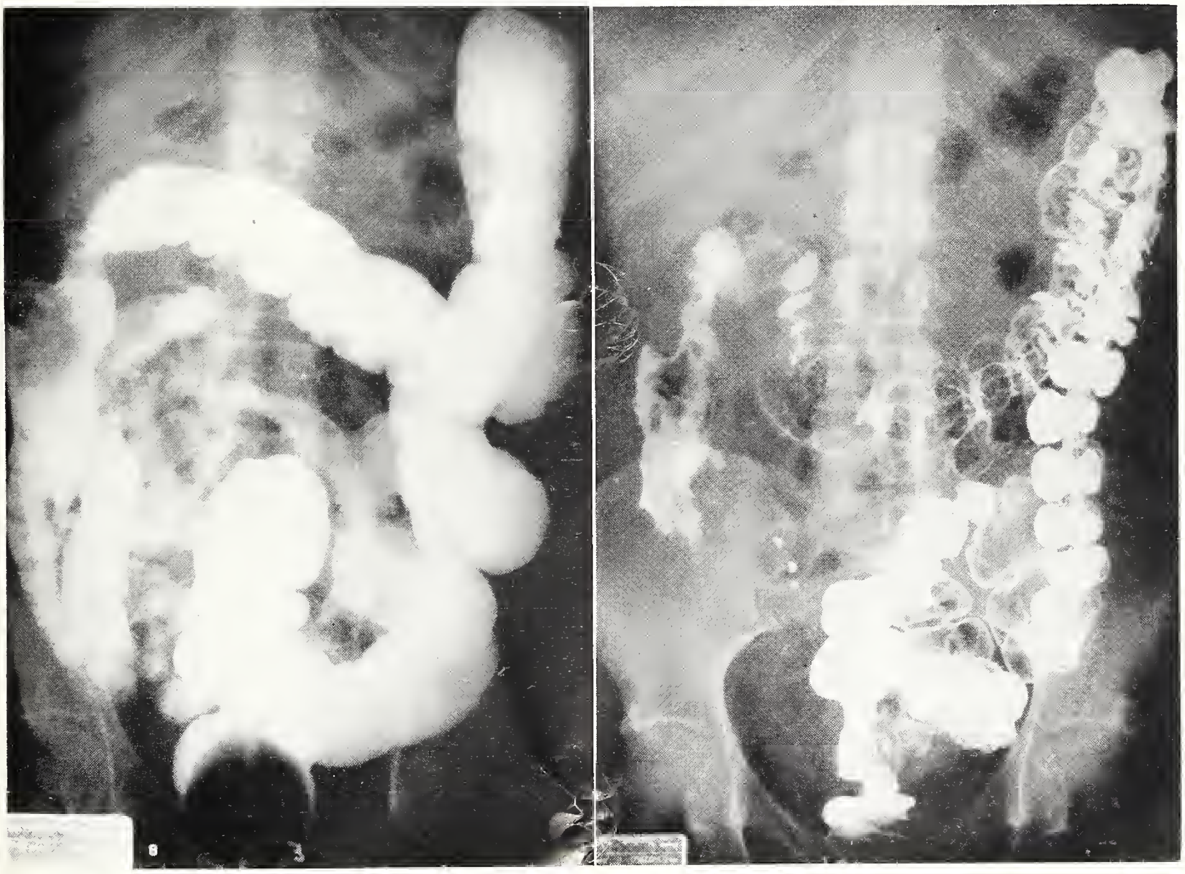
On the day following admission, a barium enema showed a constricting lesion of the hepatic flexure with more extensive involvement than usual of the lower portion of the right colon (figs. 1 & 2). Air contrast enema of the colon showed "annular carcinoma of the ascending colon. Changes in the more proximal portion of the right colon may represent extension of neoplastic growth. The possibility of an old inflammatory lesion of proximal right colon cannot be ruled out. Malignancy is thought to be definitely present." Intravenous pyelogram showed marked impairment of renal function with no excretion of a double dose of contrast material. "A small density overlying midportion of the right renal shadow may represent a small calyceal calculus. An elongated calcific density in the hilus of the left kidney may be a vascular shadow." A chest film showed bilateral pleural effusion with no evidence of apical disease.

Three days following admission, the patient developed more pedal edema and sacral and tibial edema, and she was digitalized. Hemoglobin, hematocrit, and vital signs became stable, and she was prepared for surgery by preparing the bowel with sulfa drugs.

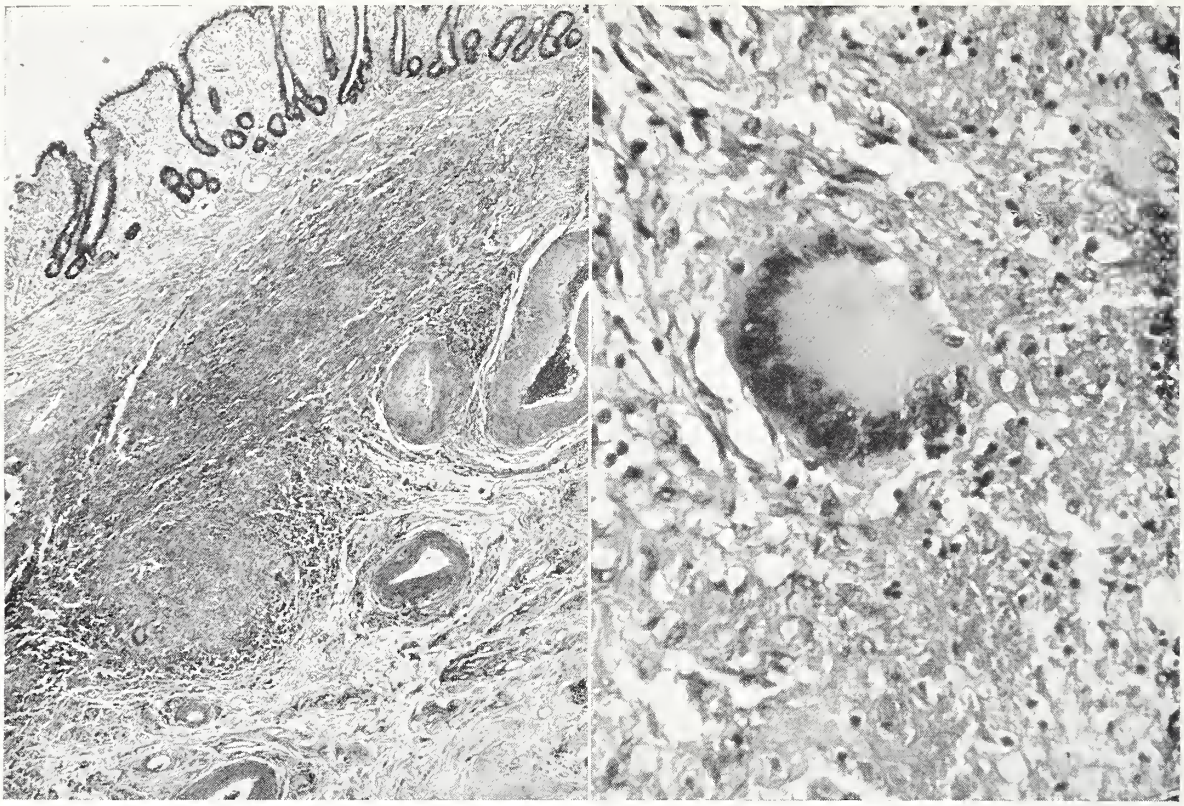
At surgery on October 25, 1963, a large ulcerated mass was found in the right colon with enlarged caseous lymph nodes adjacent to it. A right hemicolectomy, (Stamm) gastrostomy, and ileotransverse colostomy were performed. Smear of the material from nodes revealed acid fast bacilli. Pathology report described a chronic granulomatous process with caseation and many beaded acid fast rods compatible with mycobacteria tuberculosis (figs. 3 & 4). No neoplastic process was recognized.

After surgery she developed oliguira, became depressed, and unresponsive except to pain. On the twelfth postoperative day peritoneal dialysis was performed in hope that urinary output would soon increase. The patient remained obtunded with temperature 102-103 degrees, and she died after 36 hours of peritoneal dialysis.

Postmortem examination revealed: (1) Progressive primary tuberculosis of the tracheobronchial lymph nodes and of the right colon; (2) Moderate bilateral bronchopneumonia; (3) Necrotizing papillitis of the kidneys; (4) Severe atherosclerosis of the aorta and renal arteries and moderate atherosclerosis



Figs. 1 & 2 Barium enema showing constrictive lesion of ascending colon.



Figs. 3 & 4 Colon containing chronic granulomatous process with caseation. (×25 and ×300)

of the coronary arteries; (5) Intramural leiomyoma of the uterus. Bacterial culture grew staphylococcus aureus coagulase positive, streptococcus faecalis, and coli in the blood and profuse E. coli and some streptococcus viridans in the kidneys.

Differential Diagnosis

Various observers have reported cases of intestinal tuberculosis mimicking annular carcinoma of the colon.[1, 2, 10] Thirty-seven years ago Brown[6] suggested the finding of such lesions: ". . . when the enema is administered, the outline may be perfectly normal. Such is not the case where the wall of the gut is involved in a malignant growth. Here, we have usually a gross alteration, producing a permanent and constant defect in the outline of the barium column, which is usually a localized manifestation. However, spasm of this segment may occur also when ulceration develops, as in early ulcerative tuberculosis. It is quite probable that chronic deep tuberculous ulcers with connective tissue and proliferative changes, will manifest themselves in much the same way as malignant tumors by producing a real defective filling."

Tuberculous lesions of the ascending colon may be confused also with amebic colitis, regional enteritis, and actinomycosis of the colon. Their clinical, laboratory, and radiographic differentiations are of interest.

Tuberculosis

Today it is felt intestinal tuberculosis occurs in 30 per cent of cases of pulmonary tuberculosis,[8] but Mitchell and Bristol[9] found 346 cases in 5529 sanatorium admissions, the incidence decreasing from ten per cent in 1924 to one per cent in 1949. Ileocecal tuberculosis is caused in most cases by swallowing of infected sputum.[7] In recent years, the bovine type is rarely the etiologic agent except in areas where tuberculosis is prevalent or where milk is not pasteurized.

After the tubercle bacillus is ingested, it is propelled through the gastrointestinal tract and localizes 85 per cent of the time at the ileocecal region[6] and less frequently to pylorus, rectum, and at any areas of partial obstruction. At the terminal ileum there are many lymphoid areas of Peyer's patches, an increased rate of absorption, digested contents of the bowel, and stasis. As a result, the bacillus is able to permeate the mucous membranes of the intestine. Occasionally, infections may occur by lymphogenous or hematogenous spread or by direct contact from an infected region.

In the ulcerative form, large irregular and undermined ulcerations occur and spread transversally. This ulcerative enterocolitis can take three courses: (1) the "stenotic" type which heals to form a smooth contracted abnormal cecum; (2) the "enteroperitoneal" type with fistula formation and a ragged and frayed appearance; and (3) the chronic hyperplastic tuberculoma type formed from a chronic granuloma causing diffuse narrowing in the cecum and ascending colon, but allowing a patent ileocecal junction. Ninety per cent of these cases are in the cecum, while 35 per cent have a palpable mass.

X-ray findings[3, 5, 8] include: (1) hypermotility with complete or nearly complete colon emptying in 24 hours; (2) irregular ileocecal filling defects; (3) spasm of the ileocecal region; (4) segmentation, dilatation, matting, stasis in ileal loops; (5) Stierlin's sign: when the ileum and transverse colon are filled, barium does not remain in the cecum, ascending colon, and hepatic proliferation of the terminal ileum resulting in a "spearhead" filling defect into the ileocecal junction; (7) a markedly distorted and shortened terminal ileum which is due to adhesions and extensive ulcerations occurs in advanced disease. Long stenotic lesions as in nonspecific ileitis, are rare in tuberculosis.

The symptoms[7] of intestinal tuberculosis are not pathognomonic, but the condition should be suggested in a patient with pulmonary tuberculosis with vague abdominal complaints as anorexia, nausea, diarrhea, constipation, regurgitation and with a fever rise without change in pulmonary symptoms. The presenting symptoms may be those of acute appendicitis, obstruction of bowel, fistula formation, recurrent diarrhea, or "functional" complaints. The most frequent symptoms are abdominal pain, diarrhea, and fistula formation. Blood usually is not found in the stool, and hemorrhage is rare in spite of extensive ulceration.

Sputum studies for acid fast bacillus are helpful for the diagnosis, but a negative sputum does not rule out the disease. Hoon had 11 positive and 14 negative sputum cultures in cases with ileocecal tuberculosis. Tubercle bacillus in stools is not diagnostic, but is a useful confirmatory aid. A proctoscopic examination is not helpful since the lower portion of the bowel usually is not affected. Skin tests are of slight value. Of five patients tested by Hoon et al., three were positive and two negative despite tuberculosis in the bowel. A definite diagnosis is made by culture studies, animal inoculations and tissue examination.

Regional Ileitis

In regional ileitis symptoms and physical examination are not diagnostic, and the disease may present with the same vague complaints as tuberculosis. Bodart et al.,[4] described three types of segmentary changes: (1) the distal segment being narrow, tubular, and spicular, (2) the intermediary segment being asymmetrical with one curved and one scalloped border, and (3) the proximal segment being dilated with only minor mucosal changes.

Radiographic findings[8] may show ulcerations, segmentations, scattering of barium, inflammatory constrictions with frequent "skip" areas. The narrowed lumen when filled with barium is demonstrated as the "string sign." Normal bowel may be between affected areas in the jejunum and ileum, and the colon may be involved.

Carcinoma

Carcinoma of the colon[8] presents radiographically with filling defects and obstruction. The fungating type, usually medullary carcinoma, occurs in cecum, ascending colon, and rectum. The polypoid type is usually found in the ascending colon, but may occur anywhere. The annular type, mucoid adenocarcinoma or scirrhous fibrocarcinoma, occurring at the sigmoid region, descending colon; and the flexures may produce a napkin ring stricture with a shelf on either side. This causes mucosal destruction and a narrowing of the lumen for a much shorter distance than strictures caused by inflammation. The symptoms, X-ray, and abdominal findings of malignancy may be similar to those of tuberculosis and impossible to differentiate.

Amebic Dysentery

In amebic dysentery[8] there is infiltration of the submucosa with the formation of nodules degenerating to ulcerations which may penetrate to the muscularis causing a thickened intestinal wall with serosal fibrosis and adhesions. The ileocecal region is usually involved first, then the ascending colon, rectum, and sigmoid. Early in the disease there are small shallow ulcers with "skip" zones, and in the majority of cases there are no X-ray findings. With progression of the disease, the cecum and ascending colon develop segmented haustrations producing an irregular distribution of barium in the large bowel. Later findings can mimic ileocecal tuberculosis with shortening and narrowing of the entire cecum. There also may be "sawtoothing" of the ileocecal region. In diffuse involvement this disease cannot be differentiated radiographically from idiopathic ulcerative colitis. It is difficult to differentiate from tuberculosis and actinomycosis except by the identification of organisms. Symptoms consist of vague abdominal pain and occasional constipation that may alternate with diarrhea, or may be due to a liver abscess which occurs in five per cent of cases.

Actinomycosis

Actinomycosis[8] of the colon may present with findings exactly like those of tuberculosis. Seventy-five to 80 per cent of cases occur in the ileocecal region with ten per cent having rectal involvement. Fistula formation is more common in actinomycosis than in tuberculosis. The two diseases cannot be differentiated by X-ray, but diagnosis is made by demonstration of the fungus.

Conclusion

Although the circumstances of this case were unusual, the diagnosis might have been made preoperatively. The patient had gastrointestinal bleeding, bilateral pleural effusion, and renal disease and was actually ill for seven months with vague symptoms of weakness, anorexia, and weight loss. These findings are compatible with metastatic disease, and gastrointestinal carcinoma was confirmed radiographically. Lymph nodes were found at autopsy in hilar regions, but these did not reveal themselves on chest film. However, considering differential diagnosis of right colon lesions, one should contemplate a tuberculous etiology in such a patient. We feel that this case serves as a useful tool to remind us of this fact.

(The authors extend their thanks to Dr. Michael M. Karl for his comments and criticisms during the preparation of this paper.)

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Sales of ethical drugs—prescription and over-the-counter products advertised only to the health professions—exceeded $2 billion in the U. S. for the first time in 1963, according to the Bureau of the Census. All drug industry sales were $2.95 billion, 5 per cent above 1962, the bureau said. It reported the ethical figure at $2.05 billion, 5.4 per cent over the previous year. The Pharmaceutical Manufacturers Association said the domestic sales figure reported by census was about $300 million less than its own figure of $2.39 billion. PMA said the Census Bureau excluded about $165 million worth of biologicals in its report. Census treated separately the sale of proprietary drugs, but said the 1963 volume was $803 million, up 4.9 per cent from the 1962 level. PMA said census figures over the years show that sales of human ethical preparations increased by 83 per cent between 1954-63; a reduction in the 109 per cent increase reported for the period 1947-54. According to the figures from the Census Bureau, "drugs acting on the central nervous system and sense organs" lead all others in sales volumes.

JACOB KULOWSKI, M.D., *St. Joseph, and*
FORREST C. LONG, M.D., *Savannah*

Paradoxical Injuries in Drivers Involved In a Head-on Collision

A brief deductive and inductive clinical thinking in connection with a collision is presented.

TABLE I

CHARACTER AND EXTENT OF INJURIES INCURRED BY OCCUPANTS OF COLLIDING STATIONWAGONS

Driver of Car No. One	*Driver of Car. No. Two*
Slight laceration below left eye	Cerebral concussion
Abrasions chest and epigastrium	Fracture left temporal bone
Laceration left knee	Fracture right upper central incisor
Abrasion right knee	Contusion temporo-mandibular joints
Contusions upper tibiae	Bleeding from left external auditory canal
	Hemorrhage into right middle ear
	Contusion lips, abrasions
	Fracture ribs: 7th right, 8-9 left
	Contusions chest and abdomen
	Three severe lacerations lateral, left lower lateral thigh, lateral upper knee and upper leg front
	Compounded fracture upper medial right patella (penetrative)
	Near avulsive compound fracture dislocation (abduction) right calcaneous and cuboid bones
	Linear fracture right acetabulum

After a look at figure 1 and table I the reader must ask himself the question: Why did the driver of car no. 1 driving at a higher rate of speed nearly escape injury while at the same time the driver of car no. 2 received multiple severe and dangerous injuries? Since the answer to the riddle regarding the driver of car no. 1 is vital to the concept of crash safety design and engineering, clues were looked for in postimpact conditions of both vehicles.

A study of figures 2 and 3 show that frontal damage of both cars was nearly the same excepting the greater sidewise bending of the frame and body of car no. 2 and extension of its crumpling to the left front door. Theoretically, the latter's longer decelerative crumpling (about five feet) would tend to ameliorate the forces to which its occupants were exposed, and vice versa

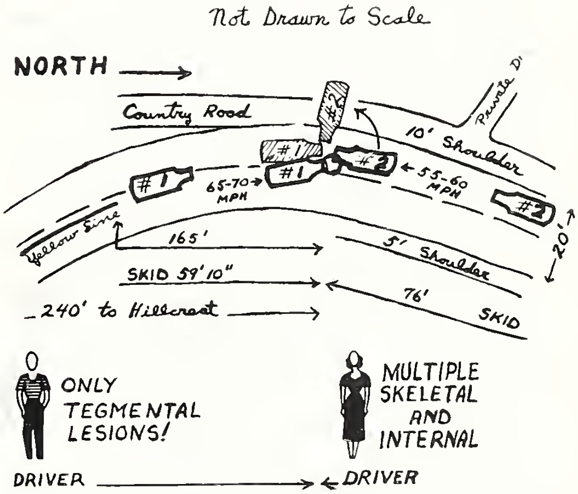

Fig. 1. Graphic illustration of the accident configuration discussed (after investigative record of Missouri State Highway Patrol). At 10:20 a.m. on a clear March morning with nothing to obstruct the driver's view two quite similar 1963 stationwagons met nearly head-on on a dry concrete road (Highway U.S. 71). Car no. 1 going north pulled to the left to pass two unknown vehicles as car no. 2 was approaching. Estimated speed at impact of car no. 1 was 65 to 70 mph, that of car no. 2 was 55 to 60 mph. Seat belts were not worn.

(as happened to be the case in car no. 1 with a deformation of about four feet). The key to the riddle (of car no. 1) seemed to appear in the postimpact conditions of the cabin areas (fig. 4).

That of car no. 1 indicated that this driver had not made violent contacts with cabin structures in front of him. Instead, it appeared that he had made his contacts during the initial period of deceleration—probably by chance, possibly by intent or instinctive reaction. In any case, his behavior made it possible for him to ride out collision forces throughout the entire decelerative distance of his vehicle (from his speed to zero). This kind of rolling-with-the-punch undoubtedly ameliorated his injuries.*

By contrast, the postimpact condition of the cabin of car no. 2 clearly showed that this driver had made violent bodily contacts with cabin components about her—after her vehicle had been decelerated. In addition to her impactive behavior, she had also been subjected to crushing forces in front, from the left side (door) and rear (forward loosening of the seat).**

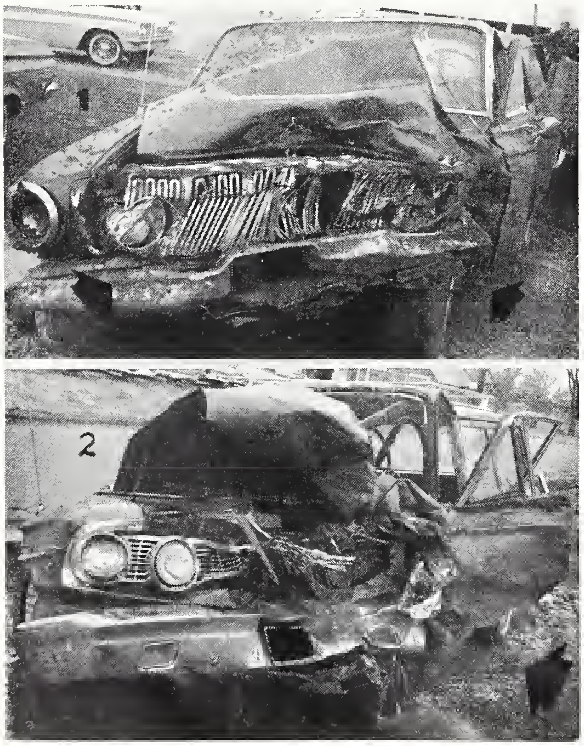

Fig. 2. Post impact photographs of frontal damage of vehicles. Compare wider area of horizontal impact of car no. 1 with that of car no. 2. See also fig. 3 of the same vehicles.

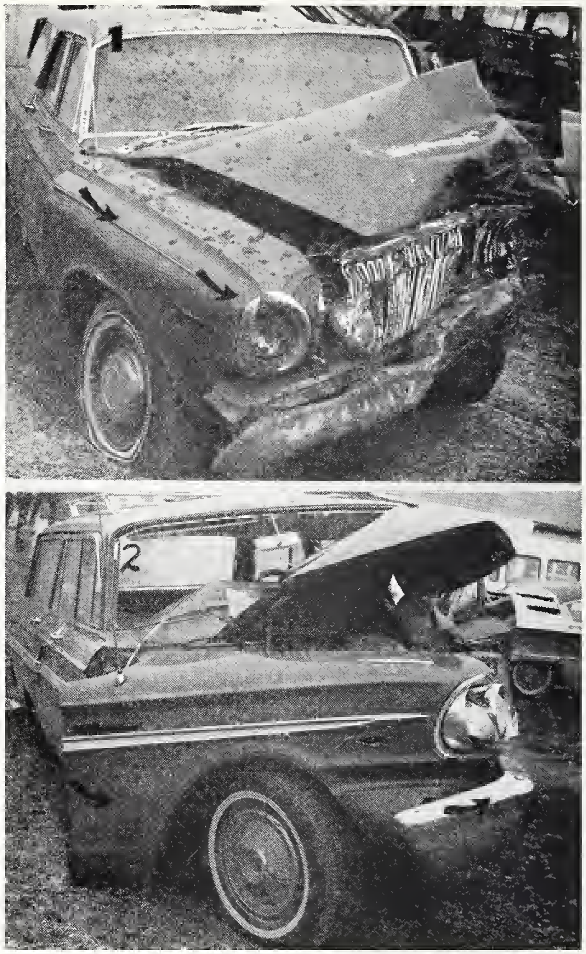

Fig. 3. Another photographic view of the same vehicles showing the greater lateral bending of the frame and body of car no. 2. This difference (and that shown in fig. 2) would indicate the greater concentration of forces in the driver area of car no. 2.

Moreover additional crushing forces were provided by the backward displacement of the engine. In point of fact she had been pinned in her seat for one half hour before she could be extricated from the wreckage. She was found twisted to the right with her right leg doubled under her.

COMMENT

This accident amply demonstrates that crash injuries are extensions or cumulative results of physicial contacts between occupants and cabin components—impactive and/or crushing. When bodily contacts are made before the vehicle has stopped dead, the clinical results are ameliorated or absent. The same thing would occur if impact areas in the cabin were designed to absorb impactive energy through a greater give or yielding when struck by the body or a part of it. Without recognition of this truth, efforts toward improved crash safety would have neither point nor purpose. Obviously, proper bodily restraint (seat belt and/or harness) would allow riding out the crash as well as preventing bodily contacts within the cabin (so long as other well known rules of design and engineering are observed regarding cabin areas, frame, body stiffness and avoidance of murderous speeds by drivers).

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* He was a white man aged 28 years, five feet 10 inches tall and weighed 180 pounds.

** She was a white woman, aged 28 years, five feet five inches tall and weighed 200 pounds.

Already a substantial advance has been made through interdisciplinary researches, but the creative margin of developmental uptake (by industry) has been slim indeed. Even allowing for further exploration and experimentation both the current lag in design and lack of enthusiasm of motorists in demanding safer innovations is becoming increasingly hard to imagine.

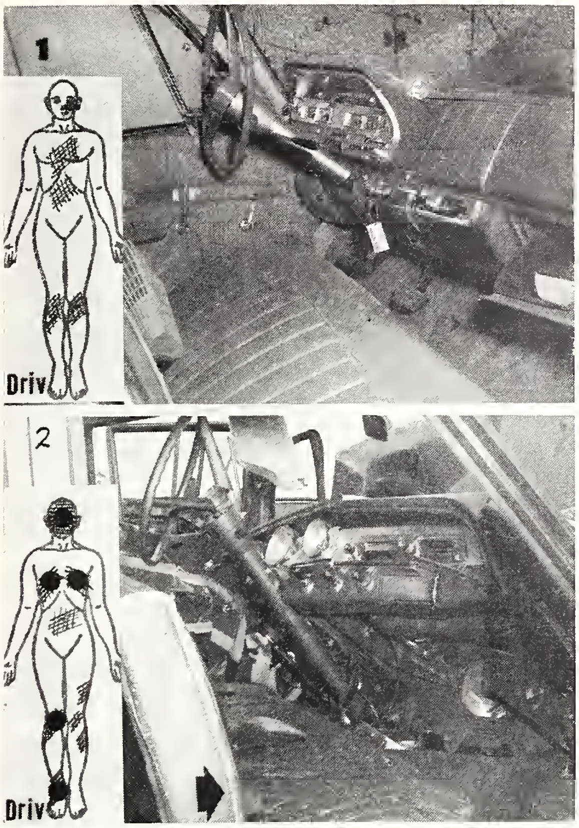

Fig. 4. Post impact photographs of both cabin areas. The relatively clean appearance of the driver area in car no. 1 contrasts sharply with the battered one of car no. 2. (see text). Inserts illustrate respective bodily areas of injuries to both drivers—hatch marks indicate tegmental ones, black dots represent both skeletal and internal lesions (see table I).

CONCLUSION

The central point of this paper is simply this: that accidents in which paradoxical clinical results occur do not dilute the need for improved automotive safety design and engineering. On the contrary, safety by chance can ultimately be assured in this manner for most road accidents. Thus, lucky escapes from injury (in accidents injurious or fatal to others when better understood) add luster and support to the concept of bioengineering prophylaxis, and invite continuation studies and all out efforts to that end without basic compromise.

The American Medical Association is preparing to publish a new manual of health information and guidance for the American family. Titled "Today's Health Guide," the manual will be an inclusive compendium of information about health which will be most helpful to the family in making the best and most economical use of the sources of health information, preventive medical services, treatment of illness and adequate meeting of emergencies. The 640-page book will be illustrated by hundreds of easy-to-understand drawings, including "trans-vision," or full-color "see-through," drawings of the organs and systems of the human body. It will be available at cost by mail order through AMA headquarters in Chicago.

IRWIN D. ZIM, M.D., ***Palo Alto, Calif.***
ARCH W. TEMPLETON, M.D., ***Columbia***

The Anomalous Antecubital Bone of the Elbow

Case Report

Discussion of a rare osseous anomaly of the elbow. This anomaly has been observed only in Negro men, and the case report concerns the first patient in whom the condition was diagnosed during life. Both authors were formerly associated with the Edward Mallinckrodt Institute of Radiology, Washington University School of Medicine. Dr. Zim is now at the V.A. Hospital in Palo Alto; Dr. Templeton is at the University of Missouri Medical Center in Columbia.

Simril and Trotter[1] have described a histologically proven anomalous bone located in the antecubital fossae of a 65-year-old Negro male, discovered during anatomical dissection. Because there was no association between this antecubital bone and either the joint capsule or a tendon sheath, the bone was not a sesamoid. A short ligament fixed it to the anterior border of the radial notch of the ulna within the margin of the articular capsule, and it articulated with the radius, ulna, capitellum and trochlea.

In addition, a transverse bar of bone divided each olecranon fossa into two unequal depressions. The resulting fossae were of insufficient size to accommodate the olecranon process, preventing extension beyond 135 degrees.

This case report documents the first patient with this entity in whom the diagnosis was made during life. The dynamic limitations caused by this osseous anomaly of the elbow are demonstrated roentgenographically.

Case Report

A 73-year-old Negro male general laborer was admitted to Barnes Hospital because of shortness of breath and bloody urine. On physical examination the chest was hyperresonant with an increased anteroposterior diameter. The prostate was moderately enlarged. Pulmonary function studies and urological evaluations were made, resulting in a diagnosis of chronic obstructive emphysema, prostatitis, and epididymitis. The patient improved with conservative management and was discharged from the hospital.

It was noted incidentally that the patient was unable to extend either elbow beyond 135 degrees. No other bony deformities were observed. The patient denied a prior history of trauma to the elbows or impaired function and volunteered that the restriction of extension had been present "all my life." He denied a family history of similar deformity.

Roentgenograms of both elbows were made in the positions of flexion, neutral and extension. Selective laminograms were made. A smooth, rectangular density with typical bony cortex and trabeculae was identified in the left antecubital fossa (fig. 1). The anomalous bone measured 9 mm. by 11 mm. and maintained a constant relationship to the radius and ulna in flexion and extension. A lateral laminogram (fig. 2) of the left elbow in neutral position afforded better definition of the anomalous antecubital bone. Roentgenograms of the right elbow (fig. 3) revealed similar findings as in the left elbow, and again the anomalous antecubital bone bore a constant relationship to the radius and ulna. Early degenerative changes were present about the elbow joint. A laminogram of the right elbow (fig. 4) demonstrated the anomalous bone and also revealed osseous encroachment on the superior part of the olecranon fossa.

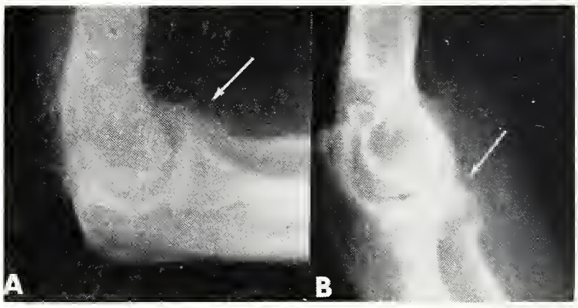

Fig. 1 Lateral projections of the left elbow in (A) neutral and (B) fullest extension positions. The thin cortex of the trabeculated, 9 mm. by 11 mm., anomalous antecubital bone is demonstrated (arrow). Its position remains constant in relation to the radius and ulna due to its attaching ligament. The olecranon tip is deformed and beaked. Its fossa is deep but shortened in length.

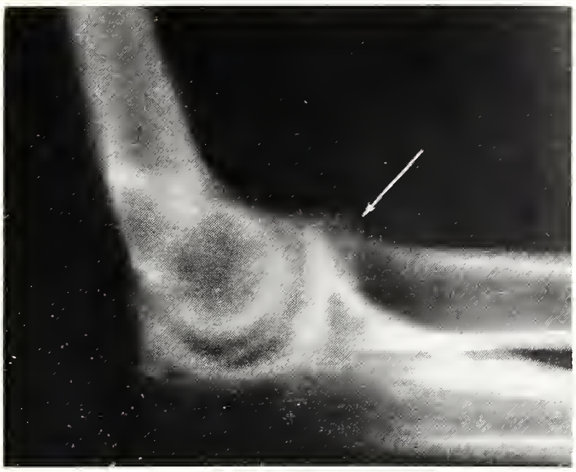

Fig. 2 Laminogram of the left elbow. The antecubital bone is well demonstrated (arrow).

DISCUSSION

The antecubital bone of the elbow has several distinctive features. To date it has been described only in Negro men. There is no history of prior trauma. The bone is relatively large, present bilaterally, and is associated with an osseous bar in the olecranon fossa that restricts full extension. The anomalous antecubital bone bears a constant and intimate relationship to the radius and ulna due to its short attaching ligament. These features were also described by Simril and Trotter.[1]

In the differential diagnosis, osteochondromatosis may be excluded because, in this condition, the osseous bodies are multiple and mobile. Osteochondritis dissecans is characterized by a free joint body and an associated epiphyseal defect. Non-fused epiphyseal centers are usually located in relation to the medial and lateral epicondyles or the olecranon process and at times are indistinguishable from chip fractures.[2]

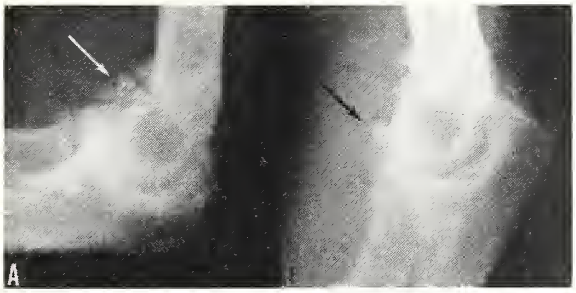

Fig. 3 Lateral projections of the right elbow in positions of (A) neutral and (B) fullest extension. The antecubital bone, 10 mm. by 11 mm., moves with the radius and ulna.

Efforts to relate the antecubital bone to phylogenetic development, as has been done with the supracondylar foramen and supracondylar process,[3] have not been rewarding.[4, 5, 6]

SUMMARY

A rare osseous anomaly of the elbow is described. The condition consists of an articulating, intracapsular, antecubital bone and an associated osseous encroachment on the olecranon fossa which prevents extension beyond 135 degrees. The first patient in whom this anomaly was diagnosed during life is reported. Thus far the anomaly has been found bilaterally and observed only in Negro men. The anomalous antecubital bone of the elbow must be distinguished from osteochondromatosis, osteochondritis dissecans, non-fused epiphyseal centers, and chip fractures.

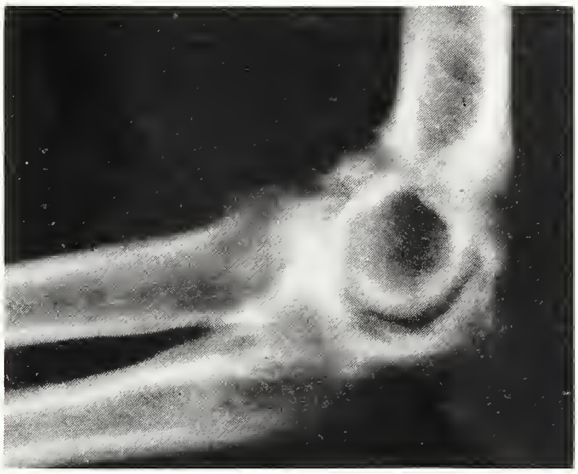

Fig. 4 Laminogram of the right elbow. The olecranon fossa is deep and shortened in length. The olecranon tip is beaked and deformed.

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RICHARD M. CAPLAN, M.D., ***Iowa City, Iowa***

Non-Allergic Eczematous Dermatitis in Children

Eczematous dermatitis is an inflammation of the skin characterized by itching, redness, and edema to the point of vesicle formation with subsequent weeping. Later there may be crust and scale formation, and finally there may be thickening and lichenification, and evidence of excoriation. The histologic features that correspond to these changes include abnormal formation of the keratin layer, intercellular edema in the epidermis and low grade upper dermal inflammatory reaction. Chronic lesions may show considerable epidermal hypertrophy. These clinical and microscopic changes are nonspecific and may vary greatly in appearance, severity, and patterns of distribution depending on etiology, chronicity, area of the body and the quality of response of that particular patient at that particular time.

The main categories of "allergic" eczematous dermatitis are: (1) **contact dermatitis** due to a *specific sensitization* to a chemical substance applied to the surface of the skin, as opposed to contact dermatitis due to application of a chemical irritant that would be injurious to anyone's skin, and (2) **atopic dermatitis**, a chronic and severely pruritic dermatitis that may take various morphologic forms, found usually in individuals with a strong personal or family history of atopy. This latter problem is a complicated disease indeed, and "allergy" often is not very important in the cause or control of the problem, even though the patients, in one sense, are "very allergic people." This discussion is concerned with forms of eczematous dermatitis encountered in children, but which seem not to be relatable to an "allergy," as that term is presently understood.

A review of the various forms of eczematous dermatitis which are found in children but which apparently are not traceable to an "allergy." Dr. Caplin, Assistant Professor of Dermatology at the University of Iowa, College of Medicine, presented this paper during a postgraduate educational conference at the University of Missouri Medical Center earlier this year.

Simple irritation is responsible for a great many clinical problems. An extremely common manifestation is the redness, dryness and slight scaliness to be seen on the cheeks, chin or forehead of youngsters, especially in winter. This may be only a slight exaggeration of the "rosy cheeks" that bespeak good health. Or, it may become severe enough to produce oozing and crusting (fig. 1). It seldom seems pruritic. In babies the macerating effect of saliva, friction with bedsheets, and rubbing with the arm are especially important. In older children it is the irritant effect of factors such as wind, sun, cold, chapping, or lip licking (fig. 2). When there is extreme dryness of our indoor ambient air, caused by prolonged use of heating or air-conditioning apparatus, then dryness and irritability of the skin will be increased. This may be of such degree that scattered or generalized patches or scaling and itching may develop. This "winter-itch" phenomenon can occur at any age and is compounded by a current compulsion in our society for frequent bathing.

Measures useful to combat these circumstances include: placing additional cotton padding be-

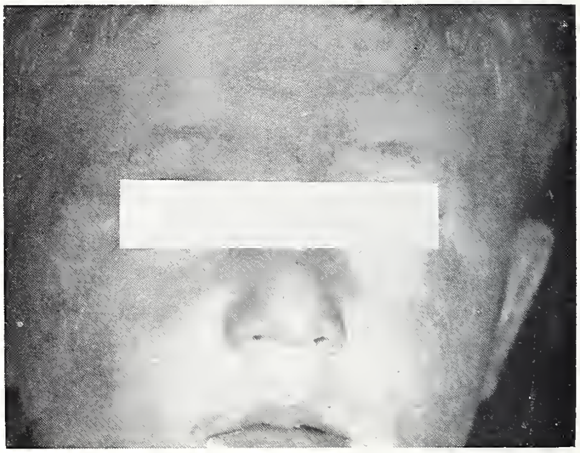

Fig. 1 Irritant cheek eczema brought about mostly by winter-time dryness, frequent soap washing, and play-time exposure to wind and cold.

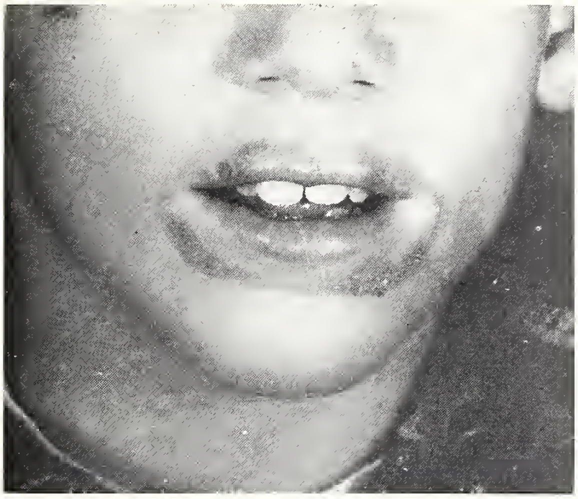

Fig. 2 Peri-oral dermatitis developed and perpetuated by a lip licking habit.

tween the baby's bedsheet and the plastic or rubber undersheet; allowing the baby to rest on his back whenever possible to reduce friction with sheet; using unironed sheets previously rinsed with fabric softener; drying the skin thoroughly but gently after washing; avoiding wind, sun and cold exposure as much as possible; reducing the frequency of washing, bathing and using of soap; cleansing with mineral or corn oil on cotton balls and using bath oil in place of soap or detergents; increasing home humidification by central or room units; applying, even to the entire body if needed, a generous and frequent film of such simple protective materials as zinc oxide ointment, petrolatum, cold cream or kitchen shortening (more expensive emollient lotions or vanishing creams are certainly all right, too); using some simple topical steroid cream if the other measures prove insufficiently anti-inflammatory, or if there is weeping.

Another common problem of irritation is **diaper rash.** Just consider the circumstances. Here is skin rubbing against other skin and against diapers, incubating within occlusive rubber or plastic pants at about 98.6° F. (often for many hours at a time) along with urine, feces, sweat, bacteria, yeasts and sometimes an impressive concentration of ammonium hydroxide from the action of fecal urea-splitting organisms. What a wonder that skin can ever remain healthy under such circumstances! (fig. 3). If these are the contributing factors, then the measures to alleviate the situation are clear. Change the diapers often, certainly as soon as fecal contamination is recognized. Be sure that diapers are well rinsed. (The use of a commercial "fabric softener" may have more merit than special "anti-bacterial" additives.) Abandon the impermeable panties, except for times of "social necessity." Be willing to let the child stay in its crib on extra padding for much of the day with *no diaper whatever.* Be extremely gentle at cleaning, using a clear water sitz-bath (without soap, detergent, or "medical detergent cleanser"), or a cotton ball soaked with water or household cooking oil. If there is not frank weeping, use a simple talc or corn starch applied at the time of diaper change; but for overnight use, a heavier barrier material, such as zinc oxide ointment, can be particularly valuable. Change the diaper before the parents retire for the night. Be alert to the particularly violent inflammatory reaction that characterizes *Candida albicans* infection, and combat it with topical gentian violet, vioform, mycostatin or amphotericin-B.

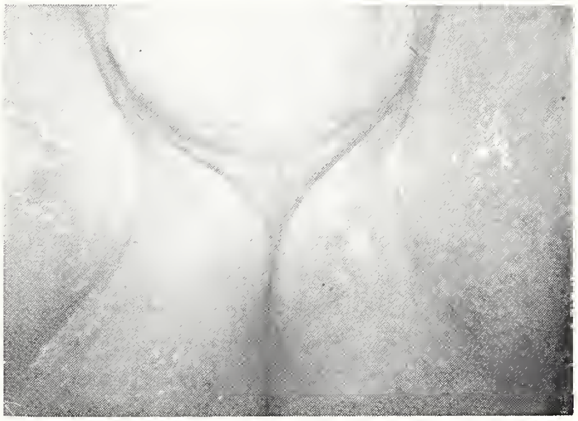

Fig. 3 A moist eroded diaper rash responds best to full-time air exposure.

Another important eczematous disorder encountered in babies and youngsters has the appearance and distribution which in adults is termed *seborrheic dermatitis.* Although some physicians disapprove use of this name in children, the well-recognized clinical picture is characterized by mild to severe "cradle-cap," redness, cracking and even weeping behind the ears, and in the folds of the neck, axillae, and anogenital areas (fig. 4). This disorder seems not to itch much. These babies are often chubby and may also show "milk-crust," or subacute eczema of the cheeks. This form of dermatitis seems especially responsive to steroid creams, applied at least three or four times daily. There is also a place for such safe "old-timers" as vioform, mild tars, sulfur, or (but not and/or) ammoniated mercury, depending on the acuteness of the dermatitis and the presence of secondary infection.

It is important to realize that some infants, who will eventually come to have a rather standard pattern of highly pruritic atopic dermatitis, may first manifest their built-in tendency to "be sensitive" and to eczematize by either a "simple irritation" or a "seborrheic" eczema. Because of the tendency for clinical circumstances to defy our arbitrary classification schemes, plus the tendency for either out-growing the problem or showing a more obvious atopic flexural dermatitis, many disputes arise concerning how best to categorize these eczemas. Fortunately for the patients, even if we simply name these various problems "infantile eczema," we can usually be of great assistance through the appropriate use of simple, reliable topical measures and by being careful to *avoid irritation* and to *be gentle* at all times.

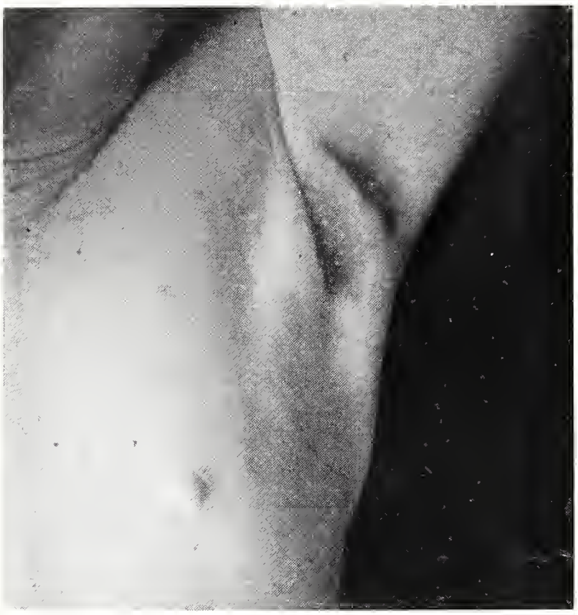

Fig. 4 Intertriginous redness and cracking of the seborrheic variety.

A number of additional non-allergic eczematous problems deserve comment. Generalized exfoliative dermatitis of the young infant (Leiner's disease) is a serious and fortunately rare problem that probably represents the most severe possible manifestation of the "seborrheic dermatitis" discussed above. Its management should be guided by a dermatologist.

Non-specific eczematous changes of hands or feet, ranging from so trivial a lesion as desquamating fingertips (fig. 5) to acute weeping dermatitis of the dorso-medial foot, are encountered rather often. They are usually responsive to cooling and ventilation of the feet, soaks, plus topical mild tar and/or steroid ointments. It is clear that such lesions often represent phases in the life history of atopic dermatitis, as expressed in that patient. Often these lesions are misdiagnosed as *tinea pedis* (with or without "id"), which is actually quite uncommon in youngsters.

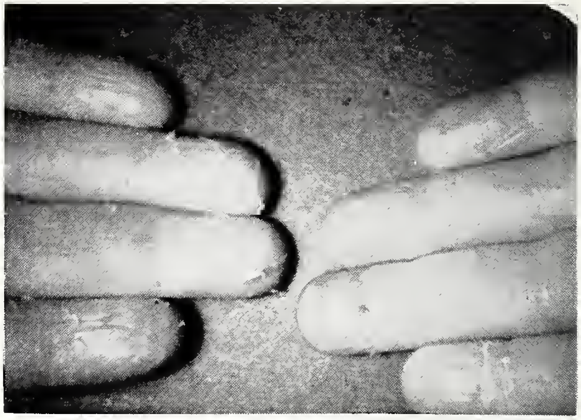

Fig. 5 Mild eczematous fingertips. This is most often due to a combination of excessive sweating, simple irritation and a diathesis (atopic) predisposing to eczematization. It also occurs on toe tips where it is often mistakenly thought to be a fungal infection.

Candida albicans infection, other than thrush, is a complication especially of diaper dermatitis and seborrheic eczemas. Suspect it when the inflammation seems especially severe, and when tiny "satellite" pustules lie just beyond the principal border. It is relatively resistant to nonspecific measures, but clears readily when specific anti-*Candida* agents are employed.

Bacterial infection superimposed on prickly heat certainly deserves recognition because of the efficacy of current anti-bacterial agents. A special variety of bacterially-induced eczema is **infectious eczematoid dermatitis** which usually appears as a subacute-to-acute change in skin chronically bathed in purulent bacterial discharge of any sort, most often from infection of middle or external ear, nose, or conjunctivae (fig. 6). Control of the primary infection is cardinal here, and steroid-antibiotic creams are useful adjuncts on the dermatitic skin.

A rare dermatitis, deserving mention only because of its excellent ability to mimic childhood seborrheic dermatitis, is the eruption of Letterer-Siwe disease. The same areas tend to be involved, especially scalp; and the weeping crust-

(Continued on page 46)

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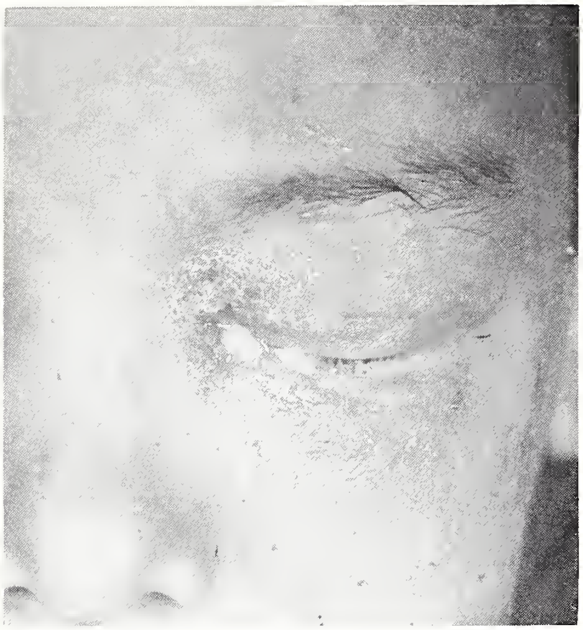


Fig. 6 Infectious eczematoid dermatitis of skin bathed in pus from conjunctivitis.

ing eruption, due to epidermal invasion by abnormal proliferating histiocytes, differs grossly from the common seborrheic eruption mainly by having a fine petechial component. This eruption may appear well in advance of abdominal enlargement, anemia or other infiltrative lesions, and may be diagnosed by cutaneous biopsy. Appropriate supportive care plus judicious employment of X-ray, corticosteroids, cytotoxic drugs and antibiotics have produced a prognosis more favorable than formerly, but still bleak.

Before concluding, it is important to mention an extremely common hazard and mistake—*overtreatment* and the production of *superimposed therapeutic contact dermatitis.* It is usually easy to produce at least moderate improvement in almost any instance of eczematous dermatitis. Unfortunately, it seems almost as easy to make things worse by unsuitable topical management. Topical anesthetics, antihistamines and anti-infectives tend to have distressingly great sensitizing ability. Topical antifungal preparations will usually be irritating to eczematous skin, even if the eruption happened to be of fungal etiology. Tars and occlusive vehicles can aggravate an acute inflammation. A limited, simple, inexpensive and remarkably safe topical armamentarium which can serve with excellence when judiciously employed in treating eczematous skin, might include water, petrolatum or zinc oxide ointment, vioform ointment of 2 per cent aqueous gentian violet, and a single unadorned steroid cream. But occasional topical applications are not enough. One must also carefully educate the patient or parents in the several additional measures that must be done, or avoided, to prevent further irritation.

Deaths

Bleyer, Adrien S., M.D., Webster Groves, a graduate of Washington University, 1899; member of St. Louis Medical Society; aged 86; died October 25, 1964.

Sante, LeRoy, M.D., Webster Groves, a graduate of Washington University, 1913; member of St. Louis Medical Society; aged 74; died October 27, 1964.

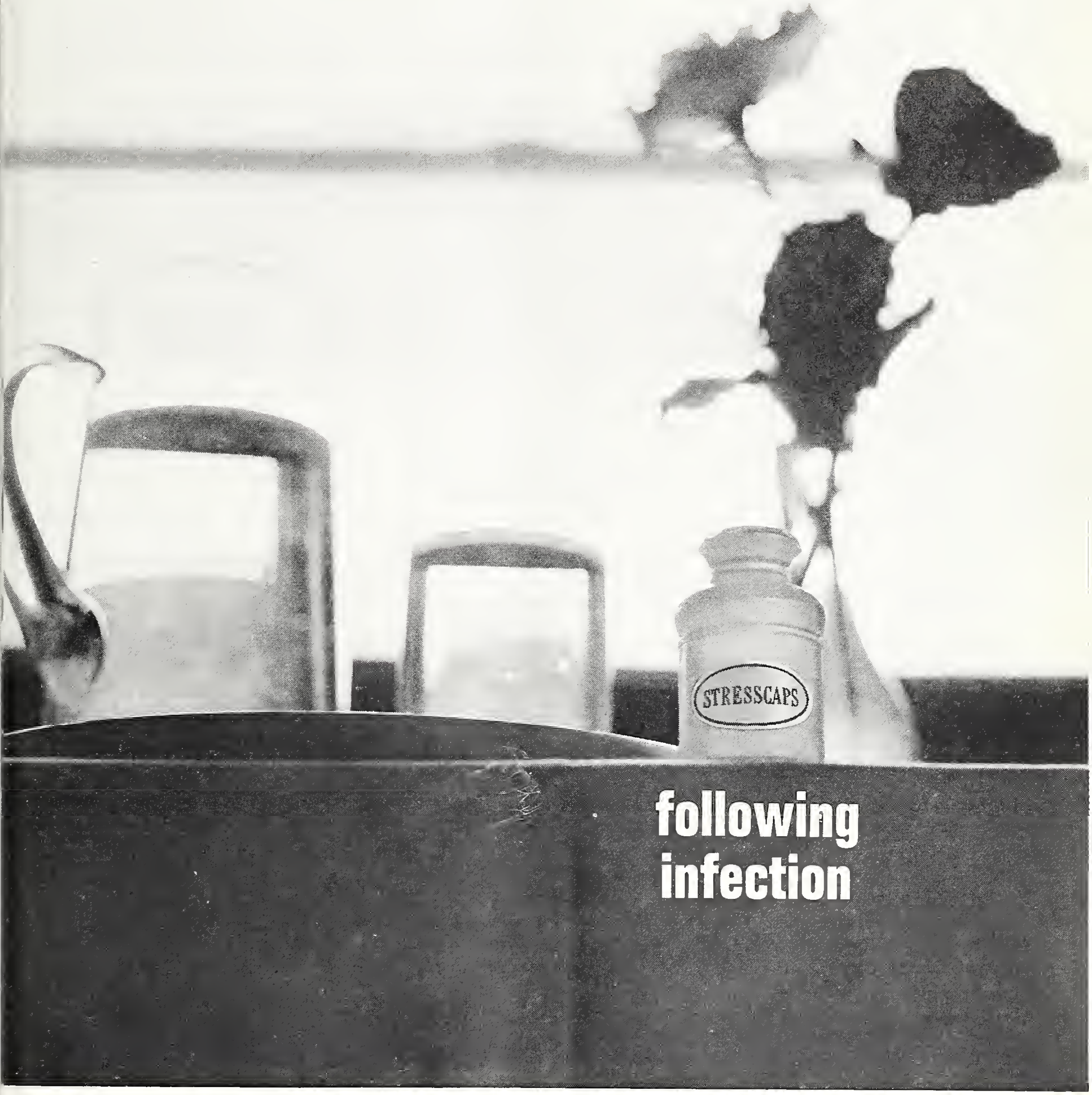
Smith, Robert M., M.D., Ladue, a graduate of Washington University, 1940; member of St. Louis Medical Society; aged 54; died November 2, 1964.

Aubin, Francis W., M.D., Branson, a graduate of Washington University, 1932; member of Ozarks Medical Society; aged 60; died November 5, 1964.

Hunter, James R., M.D., Webster Groves, a graduate of Albany Medical College, 1909; member of Callaway County Medical Society; aged 86; died November 9, 1964.

Penney, David L., M.D., St. Louis, a graduate of Washington University, 1911; member of St. Louis Medical Society; aged 78; died November 12, 1964.

Carlisle, John B., M.D., Sedalia, a graduate of Washington University, 1920; member of Pettis County Medical Society; aged 68; died November 14, 1964.



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Leonard T. Furlow, M.D.

President's Message

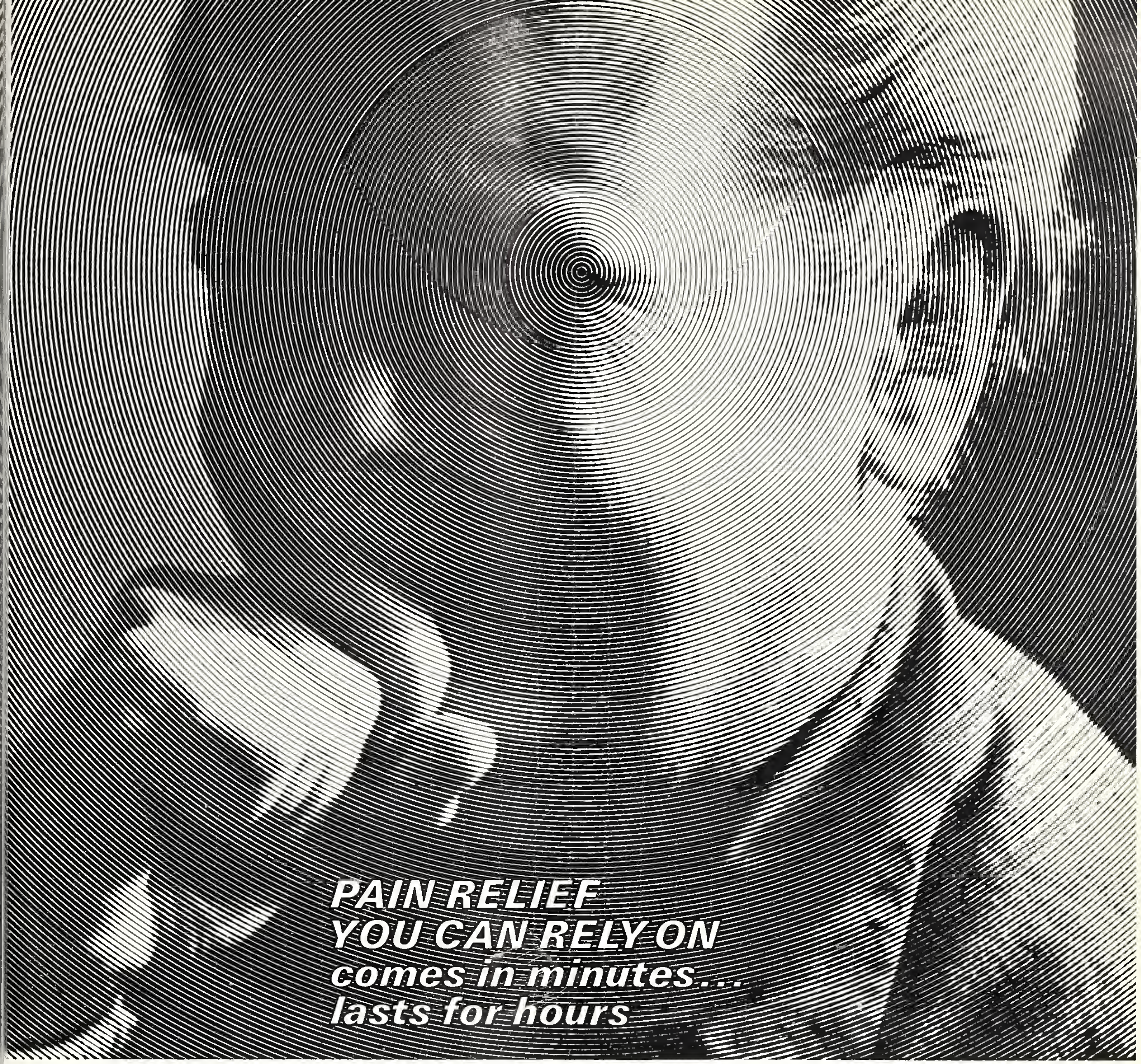
The American Medical Association at its Clinical Session reaffirmed its opposition to the Social Security approach to medical care for the aged and its confidence in the Kerr-Mills program. The House of Delegates stood firmly by this previously stated policy, despite a move asking for re-examination of position and consideration of possible compromise. The recommendation for capitulation came, of course, as a result of the November election.

A.M.A. leaders realize fully that many congressmen owe their election victories to the "Johnson-Humphrey-coat-tail" effect and will be expected to rubber-stamp any proposal which the administration puts before them. It is known, however, that some of these lawmakers, despite their admitted political debt, are still cool to the administration's "medicare" plan. Names of these representatives are not being publicized at this time in order to protect them from the political pressures which undoubtedly would be brought to bear if their viewpoints were widely known.

With this in mind, state and local medical organizations probably will be asked soon to make one final effort to convince individual congressmen of the rightness of our stand. I sincerely believe that the preponderance of evidence in the "medicare" controversy is on our side. The problem is to convince our own legislative representatives that objective facts and valid reasoning should take precedence over subjective emotions and political expediency.

I urge individual physicians and county societies to begin planning now the steps which will be most effective in approaching their own congressmen.

Leonard T. Furlow



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Literature on request.

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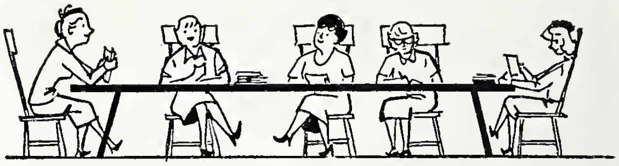

As I write this, we have just had a wonderful Thanksgiving with all of our family home. Carol and Dave from K. U.; Nancy, Bob and children surprising us by driving in from Rochester, N. Y., at 6:00 a.m. on Thanksgiving morning; and 86-year-old Grandfather Bohnsack making our festive table complete! No more calories until Christmas!

Mrs. R. W. Bohnsack

I just returned from Memphis and the fine convention of the Woman's Auxiliary to the Southern Medical Association. Ruth Kelling was installed as President, and it was with great pride that I presented her with a beautiful silver tray and a lovely white orchid corsage from our state auxiliary. Macy Brady was there to give her a gorgeous corsage of white camellias from Lafayette-Ray. Mrs. O'Connell from St. Louis, who did the installing, presented her with a box of long-stemmed red roses from the Past Presidents. Ruth was quite touched and has written a lovely thank-you note to all of you. Jane Stewart from Sedalia is her new Corresponding Secretary and Venus Schattyn from St. Louis is a Councilor. Also present from Missouri were Janet Campbell from Sedalia, Lillian Butler from St. Joseph, Mrs. Herbert Warres from Springfield, Mrs. Graham Asher from Kansas City, and Mrs. Robert Haynes from Marshall.

On October 13, I attended a wonderful workshop of the Jackson County Executive Board at the home of Jane Wade. It was ably conducted by Lucile Ferris, President. Ruth Kelling and Greta Trowbridge presented the clever "Disaster Preparedness" skit from the Chicago conference. It's a fine idea for others of you to try, if you haven't already done so.

Now that the election is a thing of the past and we have promises of "medicare" legislation after the first of the year, *please* take five minutes out of your busy schedule to write your congressmen! It's needed more than ever!

The need for work in the Mental Health field is increasing. A recent survey by the National Institutes of Mental Health and the American Hospital Association showed that 1,005 general hospitals admit psychiatric patients. These hospitals reported that for the most recent 12-month period they discharged 412,459 psychiatric patients. Appalling! But what progress, that they *can* be discharged! Florence Guhleman, our Mental Health chairman, has sent you good material. Please try to use it in your programming.

In your Community Service projects, don't forget to include our new Health Education project —the distribution of Health information materials to the general public—pamphlets and posters that supply sound medical advice and knowledge on a wide range of health topics. Mary Eggers, our chairman, can help you with this, if you don't already know where to get these materials. She has written you about the new Home-maker Service idea which is a wonderful project if you have the need in your community. Several auxiliaries are conducting "Meals-on-wheels" projects successfully.

I am sure you're remembering your Senior Citizens at this time of the year. They need YOUR help. Be sure to report to Mrs. Wadlow, our state chairman.

We are so pleased to announce the organization of the new Lincoln-St. Charles County Auxiliary on November 10. Mrs. Thomas A. Schneider, 27 St. Henry Court, St. Charles, is the president. Add this to your roster, please. Welcome aboard, Lincoln-St. Charles! We hope you will gain much from your auxiliary. We *know* we'll love having *you*. Thanks to Geraldine Walton, Fourth District Director, for her organizational work!

I seem to be so full of news that it's difficult to stop, but I had better or MISSOURI MEDICINE will cut me off as a contributor! Happy New Year! Joy, peace, and good health in 1965!

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Lov-é brassieres provide correct physiological support because they are custom-fitted to your precise instructions. They give gentle-yet-firm support, more youthful, normal contours and freedom from shoulder strap strain for even the most difficult problem figures. And after breast surgery, the exclusive, patented Lov-é "Twin" creates natural restoration for perfect confidence. Also a complete line of maternity, nursing, sleeping bras and hospital binders. All with the gentle femininity that women appreciate. Have your nurse call for post-mastectomy exercise charts and literature.

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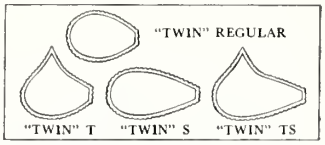

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EDITORIALS

HELP WANTED

In this day of "scientific" merchandising, it is necessary for those firms which operate in the market place to remain as knowledgeable as possible on the effectiveness of their promotion and advertising efforts. Broadcasters use the much-publicized "rating" system, which presumably tells the merchandiser how many potential buyers are receiving his message. Newspapers and magazines use circulation figures and readership surveys as a measure of their potential as advertising media.

Opposite page six of this issue of MISSOURI MEDICINE, you will find a readership questionnaire. This same (or similar) form is being published in medical journals over the entire nation. Hopefully, the response from individual physician-readers will assure those companies which are regular advertisers that their messages are "getting across" and will convince other companies that they should be participating in the publication programs of medical organizations.

A scientific publication like MISSOURI MEDICINE is an expensive project. If such a publication were supported entirely by the members of organized medicine, it would require a major readjustment in the dues structure. Only through the participation of our advertisers, can we maintain the present excellence and scope of our publications.

The scientific papers which appear in MISSOURI MEDICINE represent just one phase in the continuing education of the physician. But for those doctors who are not able to take advantage of the "in person" conferences and post-graduate courses, this is a very important phase. Surely, then, it is to the advantage of the entire profession that we occasionally make an overt act of support for the publication and for those business concerns which make it possible.

We appeal to all members of Missouri State Medical Association to take the time NOW to complete the questionnaire opposite page six. If you prefer to leave some of the questions unanswered, feel free to do so. If you don't have the time (or inclination) to answer any of the questions, at least have your secretary tear out the page, add your name and send the uncompleted form to the State office. Even this passive response will tell us that you "got the message."

Aside from the commercial aspects of this endeavor, the Publication Committee and Editorial Board are sincerely interested in YOUR opinions of your state journal. We believe that MISSOURI MEDICINE is a good publication, but we would like to see it become better. This can be accomplished only if we have the best ideas and the best material available among Missouri physicians. Your cooperation is needed; your participation will be appreciated.

TRASH CAN DISPENSARIES

(The following letter was recently received by Mr. William H. Bartleson, executive secretary of the Jackson County Medical Society, and was published in the October 24, 1964 issue of the Greater Kansas City Medical Bulletin. It is reprinted here as a reminder to physicians and all others who handle medical supplies.)

Dear Mr. Bartleson:

The Independence, Missouri, Police Department has recently discovered used syringes and certain restricted drugs (physicians' samples) in open trash containers behind buildings occupied by doctors. We, in law enforcement, consider the disposing of these items in this manner as dangerous. Narcotic addicts would find these syringes very valuable to them and, of course, throwing away restricted drugs in this manner would allow people to come in possession of the drugs without prescription.

In behalf of the law enforcement agencies in the Greater Kansas City area you are requested to urge your members to destroy, or otherwise make inoperative, used, throw-away type syringes before disposing of them and, of course, to take steps to prevent restricted drugs from winding up in trash cans.

Your help in this matter is no only deemed necessary for the protection of the public but is very much appreciated by your law enforcement agencies.

Sincerely,
ORSON F. MYERS, *President*
Metropolitan Area Chiefs and Sheriffs Assn.

Of 507 patients with confirmed ear, nose and throat infections... 465 or 91.7% were treated successfully with Signemycin®

Note:
Adams,* whose 50 patients included 20 with ENT infections, stated that Signemycin "was particularly valuable in infections that did not respond to other antimicrobial agents, and in patients to whom penicillin could not be given." All his cases responded within five days; in most patients, all signs of infection disappeared in three days.

*Adams, J.: J. Tenn. Med. Ass. 50:446, Nov., 1957.

Condition	No. of Patients	No. Responded to Signemycin
Otitis media	90	86
Pharyngitis and laryngitis	162	148
Sinusitis	68	55
Tonsillitis and peritonsillitis	163	153
Various	24	23
Totals	507	465 (91.7%)

consistently effective...often when others fail

Signemycin®

tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg.

capsules (250 mg.)

Also available as Syrup, Pediatric Drops, and half-strength Capsules

Brief Summary and Bibliography follow.

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Editorials

GUEST EDITORIAL

(The following editorial appeared in the November 6, 1964 issue of the St. Louis County Medical Society Bulletin. It was written by the Bulletin's editor, Miles C. Whitener, M.D.)

It Happened Yesterday

Yesterday I joined that great group who are for Fedicare (often called Medicare). Yesterday I became 65 years old. Now I have entered that period of life when I am to be cared for by the younger generation simply because I have reached the age of 65, for no other reason on earth than I am now two times as 32.5 years old. Before yesterday I was an advocate of the free enterprise system—pay your own way system—don't expect or take anything for nothing system. But all is different now. Now I want (and expect) (haven't I been promised?) 50¢ per day per ingrown toenail, $30.00 per month for halitosis, 79¢ per day for ear wax, 18¢ per day per loose tooth, $7.50 per week plus two quarts of hair tonic for dandruff, 36.5 days of free hospital care per visit (limit 10 visits per year), 31 days of home nursing (young and good-looking nurses) care per month (limit 12 visits per year).

Now so far as drugs are concerned, I expect my blood pressure medicine, tranquilizer, alcohol (for that heart condition—86 proof), aspirin, corn pads and denture adhesive to be paid for by the younger generation—REMEMBER, I'm past 65!

My doctor ($6.00 per office visit) is to be paid for—I am told—by my Uncle who lives in Washington, D. C., and since I think my doctor likes me (and perhaps needs the money) I intend to see him on Mondays, Wednesdays, and Fridays. (I haven't anything else to do and he gets paid on a per patient basis.)

Yes, I'm for Fedicare, Medicare, and just as soon as I finish clipping those damn coupons from a million dollars worth of tax-free municipal bonds, I'm going to start raising Hell for a Medicare program that will include my Lawyer, Tax Consultant, Service Station, Grocer, Tailor, and Undertaker. If Fedicare-Medicare is such a great system for Doctor and Pharmacist why should it be limited to only them? Let's go all the way with the goodness and benefits of the program and give it to all the other professions, businesses, and industries.

Speed the day when Ford Motor Company or General Motors or Chrysler builds me a car *for free* because I'm past 65. Random House and Macmillan must give me free books, *Life*, *Look* and the *Saturday Evening Post* will come to me without cost and my cemetery lot and a $2,000 tombstone will be charged to the younger generation because I've lived to that magic number—65!

My final comment: God bless all those young folks who have voted to saddle themselves with the debt that will make all these things free to me and mine in our "old" age.

(signed) I'm 65 yesterday

UNITED FUND

For the fourth consecutive year, the Executive Office of Missouri State Medical Association has been awarded a United Fund Plaque. These citations are presented annually to business and professional offices, commercial concerns and industrial plants where employees have given 100 per cent support to the United Fund Campaign of Greater St. Louis. The original Plaque and the three annual citation bars are on display in the Executive Office.

Missouri Medicine *welcomes comments and contributions from its readers. Correspondence should be addressed to the Editor with the understanding that such correspondence may be rejected or published (in entirety or in part) at the discretion of the Editor. With the exception of scientific papers, correspondence usually cannot be acknowledged or returned.*

Of 1,028 patients with confirmed respiratory infections... 954 or 92.8% were treated successfully with Signemycin®

Note:
Hammerl* selected his patients for treatment with Signemycin on the basis of demonstrated bacteriological resistance to other antibiotics or failure of previous therapy. Of 100 patients with various respiratory tract infections, 95 responded to Signemycin. Pathogens isolated included staphylococci and *Diplococcus pneumoniae.*

*Hammerl, H.: Wien. Med. Wschr. 108:629, July 26, 1958.

Condition	No. of Patients	No. Responded to Signemycin
Abscess, pulmonary	17	16
Bronchiectasis	19	13
Bronchitis	286	267
Bronchopneumonia	192	179
Empyema	12	11
Pneumonia, lobar	150	146
Pneumonia, other febrile	160	150
Various infected pneumopathies	192	172
Totals	1,028	954 (92.8%)

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tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg.

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WASHINGTON

The Johnson-Humphrey landslide victory at the polls in November still dominates the nation's political conversation as the old year gives way to the new. Most of the so-called experts agree that with the Democrats holding their largest congressional majority in 28 years, Social Security "medicare" is much closer to reality than it has ever been before. This does not mean, however, that King-Anderson type legislation is a certainty.

Rep. Wilbur Mills (D.-Ark.), chairman of the House Ways and Means committee, is still outspoken in his opposition to linking health care for the elderly to Social Security. He expresses the hope that calm examination of the facts will lead to a compromise which, at least, will protect the present Social Security structure from fiscal fiasco. Rep. Thomas Curtis (R.-Mo.) also continues his opposition to the "medicare" idea.

AMA representatives report that there are other congressmen, some of whom rode the Johnson-Humphrey coat-tails to victory, who have misgivings about former administration "medicare" proposals. They undoubtedly will be under heavy pressure to put aside their personal and intellectual integrity and to pay off their political debts.

Fifteen physicians ran for congressional seats in the November election, but only three of them were successful. One of those was Durward G. Hall, M.D., who will return to Washington as Representative of Missouri's 7th District. Doctor Hall is one of MSMA's delegates to the AMA.

Legislators at both the national and state level often complain that the only time they hear from the voters is when the voters want something. The complaint applies to both individuals and organizations, and medical organizations probably are just as guilty of this lapse as any other groups. An example of how legislative contact can "go the extra mile" is this letter written by Robert C. Coe, M.D., president of the King County (Washington State) Medical Society. The letter is addressed to Rep. Wilbur Mills.

Dear Congressman Mills:

I should like to express my personal thanks to you for the courage you have displayed over the past several years in taking a firm stand against legislation directed toward inclusion of health care for our senior citizens financed through the Social Security system. The pressures applied to sway your judgment must have been great, and dedication to a cause which is fundamentally right must have been your strongest armament in this fight. Your own performance and effectiveness throughout the many hearings has firmly reassured me that the democratic way we enjoy is the right way.

It would be redundant to repeat the many arguments presented for and against "King-Anderson" type of legislation, but one thought has occurred to me in this regard which I have not seen presented.

The medical profession has been indicted as being against progress, voting against our beloved senior citizen, contributing to the downfall of the future of health in America, as well as many other similar charges, unworthy of repetition.

What has not come forth, I believe, is the fact that the medical profession as a whole would stand to gain great personal advantage from the passage of such a measure. Elimination of the cost of hospitalization from the individual economic scheme would make in-hospital elective treatment possible for a whole new segment of our population, and soon fill our hospitals. With hospital bills of no concern, the limited budget of older people can be applied directly to the doctor's bill. Full hospitals mean increased business, and increased business enhances the personal income of the physician.

I point this out simply because, in the history of our country, it is most unusual—even unheard of—to find a group voting against its own economic advantage. Such a stand, by the AMA and the doctors of America, could only be interpreted as being taken in the best interest of the people of the United States.

It disturbs me greatly to see physicians presented as being opposed, in unison, to measures which are purported to be in the best interest of the good health of our people. Perhaps such a telling argument as I have presented above will help in a small way to stem such criticism.

Please accept my thanks, and know my personal admiration for the courage and wisdom you have displayed in your continued firm stand against legislation which never could be considered as more than a political resource.

Yours very truly,
ROBERT C. COE, M.D.
President,
King County (Washington) Medical Society.

Of 1,021 children with various confirmed infections... 950 or 93.0% were treated successfully with Signemycin®

Note:
The effectiveness of Signemycin was demonstrated by Chattas and his co-workers* who administered Signemycin to 30 children with serious staphylococcal infections resistant to commonly used antibiotics. Only one failed to respond. In each case the use of this drug was indicated by antibiogram. Those children treated with a nonselected antibiotic—for comparative purposes—took three times longer to recover.

Chattas, A. et al.: Antibiot. Med. 7:300, May, 1960.

Condition	No. of Patients	No. Responded to Signemycin
Eye, ear, nose, throat infections	368	343
Respiratory infections	369	346
Gastrointestinal infections	42	30
Skin and soft-tissue infections	38	37
Deep-seated or generalized infections	47	44
Various conditions	157	150
Totals	1,021	950 (93.0%)

consistently effective...often when others fail

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tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg.

capsules (250 mg.)

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SIGNEMYCIN®

Side Effects: Glossitis and allergic reactions, as well as severe anaphylactoid reactions, have been reported as rare side effects. Should significant reaction or idiosyncrasy occur, discontinue medication and institute countermeasures. Use of tetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. Reduce usual oral dosage and consider serum level determinations in patients with impaired renal function to prevent possible liver toxicity due to excessive accumulation of antibiotic in the serum.

Precautions: Overgrowth of nonsusceptible organisms may occur. In such cases, discontinue medication and institute appropriate specific therapy as indicated by susceptibility testing. Aluminum hydroxide gel given with antibiotics has been shown to decrease their absorption and is contraindicated. The coloring agents used in Signemycin Syrup and Pediatric Drops may produce red discoloration of stools.

Triacetyloleandomycin, a constituent of Signemycin, administered to adults in daily oral doses of 1.0 Gm. (3 Gm. Signemycin) for periods of more than ten days may produce hepatic dysfunction and jaundice. In the rare patient who requires this high dosage level of Signemycin initially, liver function should be carefully followed and dosage should be reduced, as promptly as possible, to the usual recommended range of 1.0 to 2.0 Gm. per day. Therefore, Signemycin is recommended primarily for the treatment of acute or severe infections, with treatment restricted to a ten-day period. If clinical judgment dictates continuation of therapy beyond ten days, serial monitoring of the liver profile should be carried out, including BSP, transaminase, and cephalin flocculation tests. Changes observed in liver function were reversible following discontinuation of the drug.

Formulas: Capsules: 250 mg. Signemycin (167 mg. tetracycline HCl and 83 mg. oleandomycin as triacetyloleandomycin).

Capsules: 125 mg. Signemycin (83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin).

Syrup: 125 mg. Signemycin (tetracycline equivalent to 83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin) per 5 cc.

Pediatric Drops: 100 mg. Signemycin (tetracycline equivalent to 67 mg. tetracycline HCl and 33 mg. oleandomycin as triacetyloleandomycin) per cc.

More detailed professional information available on request.

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Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	**No. Responded to Signemycin**
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

consistently effective...often when others fail

Signemycin®

tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg.

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NEW MEMBERS

James R. Cobb, M.D., 6741 Prospect Ave., Kansas City, has become a member of Jackson County Medical Society. Dr. Cobb is a native of Little Rock, Arkansas, received his preliminary education at Memphis State University, and his M.D. degree at the University of Tennessee in 1963. He specializes in general practice.

Richard E. Davis, M.D., 4643 Wyandotte, Kansas City, has become a member of Jackson County Medical Society. Dr. Davis is a native of Joplin, Missouri, received his preliminary education at the University of Kansas, and his M.D. degree at the University of Kansas in 1954. He specializes in child psychiatry.

Virginia L. Fogerson, M.D., 108 S. 2nd St., Branson, has become a member of Ozarks Medical Society. Dr. Fogerson is a native of Aurora, Missouri, received her preliminary education at Drury College, and her M.D. degree at Womens Medical College of Pennsylvania in 1952. She specializes in general practice and surgery.

William H. McEachen, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. McEachen is a native of Omaha, Nebraska, received his preliminary education at the University of Kansas, and his M.D. degree at the University of Kansas in 1959. He specializes in pediatrics.

Don A. MacCubbin, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. MacCubbin is a native of Baltimore, Maryland, received his preliminary education at Johns Hopkins University, and his M.D. degree at Johns Hopkins University in 1957. He specializes in neurosurgery.

Richard A. Osbourn, M.D., 503 Douglas Blvd., Fulton, has become a member of Callaway County Medical Society. Dr. Osbourn is a native of Washington, D. C., received his preliminary education at Westminster College, and his M.D. degree at the University of Missouri in 1963. He specializes in general practice.

(Continued on page 69)

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brand of chlorthalidone
the long-acting diuretic

Indications
Many types of edema involving retention of salt and water.
Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
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Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
One tablet (100 mg.) daily with breakfast.
Availability
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For full details, see the complete prescribing information.

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CHICAGO MEDICAL SOCIETY

March 1, 2, 3 and 4, 1965

Palmer House, Chicago

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Chicago Medical Society
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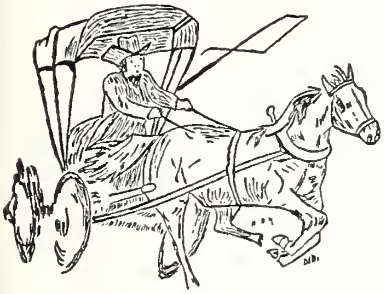
LEO H. POLLOCK, M.D.

Missouri Medicine in Review



FORTY YEARS AGO

The American Board of Otolaryngology was organized in Chicago on November 10, with Hanau W. Loeb, St. Louis, serving as secretary and treasurer. The office of the Board is at 1402 S. Grand Blvd., St. Louis. The Board comprises representatives of the five national otolaryngologic associations.

The prosecuting attorney of Randolph County has filed charges against chiropractors in that county for practicing medicine without a license.

Governor Hyde has appointed Dr. James Stewart, St. Louis, a member of the State Board of Health to succeed Dr. R. S. Vitt, St. Louis, recently elected Coroner of that city.

Dr. Richard L. Sutton, Kansas City, has presented a collection of African trophies to the University of Missouri. Dr. Sutton recently returned from an expedition into Africa, representing the University Department of Natural History. The collection includes a wide variety of weapons, implements, domestic articles and clothing.

Dr. Max Starkloff, Health Commissioner of St. Louis, advocates a six months' term in jail for persons who catch smallpox or, as he says, "allows smallpox to catch them." In an address before the Optimists' Club, he reported that it cost the city more than $150 to care for every case of smallpox, while to prevent the person from taking the malady it cost only 4 cents. At a meeting of the Executive Committee held in St. Louis December 17, questions affecting medical practice and the public health were discussed and several amendments to the Practice Act were advocated.

TWENTY-FIVE YEARS AGO

Dr. Louis H. Hempelmann, St. Louis, was honor guest at a dinner celebrating the fiftieth anniversary of the Deaconess Hospital, on November 28. Dr. Hempelmann, the oldest staff member in years of service, was presented with a watch.

Beginning July 1, 1940, there will be openings for assistant residents at the Ellis Fischel State Cancer Hospital, Columbia. Salaries will be $35.00 monthly plus room, board and laundry. At least one year's previous intership is required.

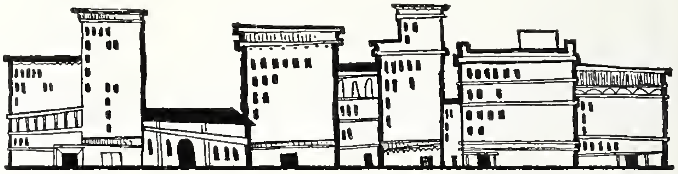
TEN YEARS AGO

Since the original passage of the Hill-Burton Act in 1946 a significant amount of hospital and allied construction has taken place. The Federal government has paid out approximately 600 million dollars which has been matched by about one and one fourth billion dollars in state and local funds. As a result of these expenditures, 106,000 hospital beds have been built in this country. Eighty-six thousand of these were general beds, 11,000 mental, 6,000 tuberculosis and 3,000 chronic disease.

The ultimate effects of prepayment on the nation's hospital economy were not foreseen 25 years ago, when a university administrator started a group of Dallas public school teachers on a local hospital prepayment plan. The Baylor plan was simply a three-party agreement to pay the cost of hospital care. Subscribers paid a small monthly fee into a common fund which was used for the payment of hospital bills. The hospital promised to provide a certain number of days of special "services" for a specified payment from the common fund. The entire transaction was nonprofit in keeping with hospital tradition. This was the beginning of the Blue Cross idea.

A birthday cake complete with candles was the centerpiece for a dinner given by his family for J. R. Bridges, M.D., Kahoka, on his 91st birthday, October 19.

From the Medical Schools



ST. LOUIS UNIVERSITY

Dedication ceremonies, marking the opening of the new surgical suite on the south end of the eleventh floor of Firmin Desloge Hospital were held on November 24. Dr. C. Rollins Hanlon, professor of surgery and director of the department, conducted a tour through the new facilities for invited guests. Mr. John B. Warner, Jr., director, St. Louis University Hospitals and Dr. Hanlon made welcoming speeches.

The suite was renovated and modernized in association with a broad program of cardiovascular surgery and investigative work supported by a grant of $272,100 from the John A. Hartford Foundation, Inc. of New York. Investigative work concerning transplantation of the heart has proceeded under the grant for the past two years.

The suite will contain an additional operating room, a recovery room area with 9 beds, outpatient facilities, an anaesthesiology suite of four rooms with adjoining secretarial offices, clinical laboratories, an ophthalmology area, dressing rooms and lounges for nurses, house staff and visiting physicians.

Thomas B. Donahue, president of Universal Match Corporation has been named chairman of St. Louis University's Medical Center Campaign. Plans for the Medical Center's over-all expansion, calling for $34,625,000 during the next ten years and immediate needs of $16,400,000, were announced in October. In commenting on his chairmanship, Mr. Donahue said he would begin the immediate mobilization of a large number of business and professional men, both nationally and locally, to serve on the Medical Center Campaign Committee.

The appointment of 23 faculty members has been announced by Rev. Edward J. Drummond, S.J., Vice President for the Medical Center.

Named visiting professor was Dr. Maurice Arnold, a native of South Africa and reader in anatomy, Queensland University, Brisbane, Australia.

Appointed associate visiting professor was Dr. M. J. T. FitzGerald, reader in anatomy at University College, Cork, Ireland. His wife, Mrs. Margaret M. FitzGerald was appointed visiting instructor in anatomy.

Mr. John B. Warner, director, St. Louis University Hospitals and Dr. C. Rollins Hanlon, professor and director of the department of surgery at the St. Louis University School of Medicine view plaque unveiled at ceremonies marking the dedication of the new surgical suite on the eleventh floor of St. Louis University Hospitals.

Newly appointed instructors and their departments were: Dr. William C. Banton, internal medicine; Dr. William T. Donovan, internal medicine; Dr. Adel Ahmed El-Etr, surgery; Dr. Salvadore R. Hernandez, orthopedic surgery; Dr. Bernard L. Hoover, clinical medicine; Dr. Maysie Hill Hughes, pharmacology; Dr. Emil F. Miskovsky, clinical medicine; Dr. Harold J. Ott, II, gynecology and obstetrics; Dr. Suksawat Pensuwan, internal medicine; Dr. Francis A. Zacharewicz, internal medicine; Dr. William A. Kamm, radiology and Dr. Mohammed Ramez Salem, surgery.

Named assistants and their departments were: Dr. Joseph J. Babka, surgery; Dr. Barbara Frost Bogue, otolaryngology; Dr. Bernard Goldstein, medicine; Dr. James Hennessy Jones, ophthalmology Dr. Beaumenoir Prophete, urology; Dr. Donald G. Spalding, radiology; Dr. Harry Revels, III, ophthalmology and Dr. Edward J. Szewczyk, ophthalmology.

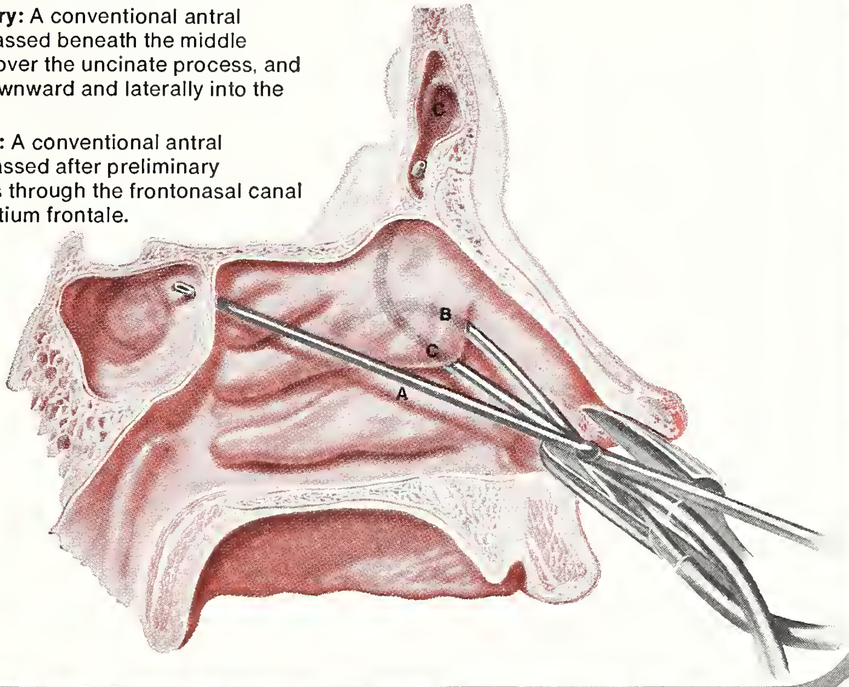
(Continued on page 66)

A rhinologic approach to the sinuses
Sagittal anatomical section of nasal cavity showing approach for probing or irrigation by cannulas.

A—Sphenoid: A sphenoid cannula (under 13.5 cm.) passed around the middle and superior turbinates to the anterior wall of the sinus through its ostium.

B—Maxillary: A conventional antral cannula passed beneath the middle turbinate, over the uncinate process, and rotated downward and laterally into the ostium.

C—Frontal: A conventional antral cannula passed after preliminary maneuvers through the frontonasal canal into the ostium frontale.



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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

(1839M)

Medical Schools (cont'd.)

WASHINGTON UNIVERSITY

The first electron microscope used in the United States for biological research is on display at the School of Medicine. It was constructed in 1935-36 by Dr. Gordon Scott, who was associate professor of histology at the Medical School at that time.

Dr. Scott, who is now dean and vice president in charge of medical affairs at Wayne State University, Detroit, built the unit to aid in locating calcium, magnesium, sodium, and potassium as metallic salts either intra- or extra-cellularly.

This early device was an emission microscope, that is the specimen emitted the electrons; whereas today's electron microscopes are transmission types in which the electrons pass through the specimens. In Dr. Scott's model, the specimen was heated on a cathode until it was ash. A high voltage then drove the electrons onto a fluorescent screen which could be photographed.

Dr. Scott, faculty member at Washington University School of Medicine from 1928 to 1942, has given the instrument to the department of anatomy for permanent display.

More than $3 million has been awarded to W. U. School of Medicine by the United States Public Health Service during the last five months. Of that total, more than $810,000 is for training programs. The remaining $2,942,395 has been awarded for research projects.

New research grants total $305,177. The largest grant has been awarded to Dr. William Sly, assistant professor of medicine. Utilizing a $54,922 grant, Dr. Sly plans to study the mechanisms which control the expression of genetic information.

The Washington University Medical Society will meet January 20. Dr. M. Kenton King, acting dean and assistant professor of preventive medicine, will discuss the production of fever in rabbits by Coxsackie virus. Dr. Carl Moyer, Bixby professor of surgery and head of the department, will discuss the care of burns based upon artificial substitution for two properties of skin. The molecular organization of keratin and the water barrier of skin will be discussed by Dr. Bryce Munger, assistant professor of anatomy.

(Continued on page 71)

PSYCHIATRY FOR THE MEDICAL PRACTITIONER

New Orleans, Louisiana
March 4-6, 1965

Sponsored by the DIVISION OF NEUROLOGY AND PSYCHIATRY OF TOURO INFIRMARY under a National Institute of Mental Health Grant

GUEST LECTURERS INCLUDE:

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- John Lambert, M.D., Medical Director, Four Winds Hospital, Washington, D. C.
- Zigmond Lebensohn, M.D., Chief, Dept. of Psychiatry, Sibley Memorial Hospital, Washington, D. C.
- William Sheeley, M.D., Director of Psychiatry & Medical Practice Project of the A.P.A., Washington, D. C.
- Philip Solomon, M.D., Chairman, A.P.A. Committee on Medical Practice, Boston, Mass.

Course will be given at Jung Hotel, 1500 Canal Street, New Orleans, La. Hotel reservations to be made directly with the Jung or hotel of your choice. Registrants who would like to enjoy Mardi Gras (March 2) are urged to make hotel reservations *immediately*.

Guest speaker for the luncheon on March 4 will be George Burch, M.D., Henderson Professor and Chairman, Dept. of Medicine, Tulane Medical School. Subject: "Emotions and Cardiovascular Disease." Cost of luncheon included in registration fee. At the end of Friday's session, there will be a dutch treat two-hour cocktail party with George Lewis and his band from Preservation Hall entertaining.

AMONG TOPICS TO BE DISCUSSED:

- "Detection of Incipient Psychiatric Disorders During a General Medical Examination"
- "Medical Practitioners and Supportive Handling of Schizophrenia"
- "Adolescence—Disturbed and Disturbing"
- "The Physician and His Reaction to the 'Crock' "
- "Newer Thoughts About the Therapy of Alcoholism"
- "Medical Conditions with Psychiatric Manifestations"
- "Recognition and Treatment of Depressive Reactions by Medical Practitioners"
- "Treatment of Emotional States by the Medical Practitioner"

Gene L. Usdin, M.D., Chief
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Enclosed is my registration fee of $20 for the "Psychiatry for the Medical Practitioner" course to be given March 4-6, 1965, at the Jung Hotel. (Checks should be made payable to the Touro Infirmary.)

Name ....

Address ....

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JOHN CROWE, M.D., Secretary

Missouri Academy of General Practice

A meeting of the Education Committee of the Missouri Academy of General Practice was held December 6, at the Missouri Hotel in Jefferson City. The purpose of the meeting was to make initial plans for the program of the 17th Annual Scientific Assembly of the MAGP to be held in St. Louis, October 23-24, 1965. Members of this committee, which was recently appointed by President Doyle McCraw of Bolivar, are: A. G. Karraker, M.D., Farmington, chairman; William Rost, M.D., St. Joseph; Stanley Roper, M.D., Ozark; R. L. Palenske, Hornersville; Lester Wolcott, M.D., Columbia; A. J. Graves, M.D., Mt. Vernon; Harold D. Lankford, M.D., Mexico; Walter Stelmach, M.D., Kansas City; Charles Ladd, M.D., St. Louis; and Wyeth Hamlin, M.D., Hannibal.

For a number of years there has been considerable dissatisfaction on the part of many members of the AAGP regarding acceptable continuation study credit requirements. Arguments concerning the number of hours required for Category I and Category II credits have been flying thick and fast for the past few years, both at the State Officers' Conference and at annual meetings of the AAGP. The Commission on Education of the AAGP has had this matter under consideration for a long time. At the June meeting of the Commission, certain recommendations concerning study credit requirements were adopted and forwarded to the Board of Directors of the AAGP. The Board returned the recommendations to the Commission for further study and report. The Commission took a further look at the matter and then returned a new set of recommendations. The Board approved this final document in September, just prior to the State Officers' Conference in Kansas City, September 19 and 20. The new definition of acceptable continuation study credits, which will become effective June 1, 1965, reads as follows:

> 1. An active member is required to complete 150 hours of postgraduate study every three (3) years. The Commission on Education will publish annually a list of medical organizations and schools whose programs are acceptable for such hours. Only hours actually attended by the member may be reported for credit. In each 3-year period an active member shall be required to attend one (1) annual state chapter scientific assembly or one (1) AAGP Annual Scientific Assembly, or *submit in writing* to the Commission on Membership and Credentials a satisfactory *reason* for his inability to attend such scientific assemblies in the 3-year period.
> 2. Application for acceptance of programs or courses not on the prescribed list may be made by an individual or an organization to the chairman of the education committee of the state chapter who will obtain a ruling from his regional advisor as to the acceptance or rejection of the course. Such application must be made at least thirty (30) days prior to the date of the program.

It is hoped and believed that these new study credit requirements will be more satisfactory to the majority of the Academy members.

New Members (cont'd.)

Van M. Robinson, M.D., 4124 Vivion Rd., Kansas City, has become a member of Clay County Medical Society. Dr. Robinson is a native of Kansas City, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Pennsylvania in 1952. He specializes in obstetrics and gynecology.

Ronald A. Youmans, M.D., 415 E. 63rd St., Kansas City, has become a member of Jackson County Medical Society. Dr. Youmans is a native of Kansas City, Missouri, received his preliminary education at the University of Kansas, and his M.D. degree at the University of Kansas in 1952. He specializes in neurology.

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Medical Schools (cont'd.)

UNIVERSITY OF MISSOURI

Dr. Kenneth K. Keown, professor of anesthesiology, was a guest speaker at the fall meeting of the Oklahoma Society of Anesthesiologists in Oklahoma City. The topics he presented were entitled, "Heart Failure in the Operating Room" and "Digitalis Preoperatively for the Geriatric Patient." He was also a guest examiner for the American Board of Anesthesiology in Kansas City.

Dr. Richard M. Hyde, assistant professor of microbiology, attended a meeting in Ann Arbor, Michigan, sponsored by the Department of Microbiology of the University of Michigan. He participated in a seminar presented for the purpose of discussing common research interests and projects.

Two members of the Department of Microbiology attended the interscience Conference on Antimicrobial Agents and Chemotherapy in New York City. Dr. Herbert S. Goldberg, professor of microbiology, and Glendon R. Miller, Mallinckrodt Microbiology Research Fellow, jointly presented a paper entitled "Studies with Fucidin-Resistant Staphylococci."

Dr. Paul Wollschlaeger, assistant professor of the Department of Radiology, attended a meeting of the hospital staff and attending physicians of Neurology and Radiology at the Kansas City General Hospital and Medical Center and presented a discussion of "Changes of Sella Turcica in the Presence of Different Tumors."

Dr. Arch W. Templeton, assistant professor of Radiology, presented a scientific exhibit entitled "The Computer Diagnosis of Bone Tumors" at a meeting of the Radiological Society of North America in Chicago. Approximately 1500 radiologists, physicists and radiobiologists attended the meeting.

Dr. G. Ray Ridings, professor of Radiation Therapy, attended a meeting of the Southeast Missouri Cancer Conference in Cape Girardeau, Missouri, and presented a talk entitled, "Uses of Radio-therapy in Female Pelvic Cancer."

Dr. Gwilym S. Lodwick, professor and chairman of the Department of Radiology, presented a refresher course on the use of computers in medical diagnosis and a scientific exhibit "The Computer Diagnosis in Radiology" at a meeting of the Radiological Society of North America in Chicago.

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LOCATION WANTED: Oklahoma Graduate, age 31, married, military obligation fulfilled, general practice experience. Will complete general surgery residency June 1965. Desire group or partnership practice. Contact John E. Griffin, M.D., 2508 Mann Ave., Des Moines, Iowa 50310.

WANTED—General Practitioner to associate in Group Practice. Modern office facilities and accredited hospital. Adequate guaranteed income to start and increases leading to full partnership. Contact Eugene B. Robichaux, M.D., Excelsior Springs, Mo.

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WANTED—Associate in General Practice in a two-man Modern Clinic Building. Town of about 7,000 in Missouri Ozarks. Modern hospital available. Contact Rollin H. Smith, M.D., West Plains, Missouri.

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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Missouri Medicine

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MISSOURI STATE MEDICAL ASSOCIATION

Preliminary Program

107th Annual Session—1965

Chase-Park Plaza Hotel, St. Louis

April 4, 5, 6, 7

Sunday, April 4

12:00 noon Registration of Delegates.
1:30 p.m. House of Delegates meeting, opening session.
3:00 p.m. Reference Committee meetings.

Monday, April 5

8:00 a.m. Registration.
8:30 a.m. Breakfast and scientific session.
    What's New in Viruses?—John W. Berry, M.D., St. Louis, moderator.
    Fundamentals of Virus Structures and Replication—Maurice Green, Ph.D., St. Louis.
    Relationship of Viruses to Cancer—Joseph L. Melnick, Ph.D., Houston, Texas.
10:30 a.m. Intermission to view exhibits.
11:00 a.m. Scientific session.
    Some Aspects of Vascular Diseases in Daily Practice—M. S. DeWeese, M.D., Columbia.
11:30 a.m. Scientific session.
    (To be announced. Sponsored by Missouri Diabetes Association.)
12:00 noon Maternal Welfare Luncheon.
12:00 noon Fifty-Year Club Luncheon.
2:00 p.m. Scientific session. (Medical.)
    Abdominal Pain—Blaine Hibbard, M.D., Kansas City, moderator.
    Abdominal Pain of Obscure Origin—Fred Kern, Jr., M.D., Denver, Col. (Sponsored by Missouri Society of Internal Medicine.)
    Vascular Studies of the Large and Small Bowel—Alexander R. Margulis, M.D., San Francisco, Calif. (Sponsored by Missouri Society of Radiology.)
    Treatment of Abdominal Angina—E. S. Crawford, M.D., Houston, Texas.
2:00 p.m. Scientific session. (Surgical.)
    Limited Surgical Treatment of the Complications of Duodenal Ulcer Disease with Preservation of the Gastric Secretory Inhibitory Mechanisms—Edgar J. Poth, M.D., Galveston, Texas. (Sponsored by Missouri Surgical Society.)
    (Second topic and speaker to be announced.)
    The Dizzy Patient—G. O'Neil Proud, M.D., Kansas City, Kansas.
3:30 p.m. Intermission to view exhibits.
4:00 p.m. House of Delegates meeting, second session.
5:30 p.m. Reference Committee meetings.

Tuesday, April 6

9:00 a.m. Scientific session.
    The Bleeding Patient—C. Rollins Hanlon, M.D., St. Louis, moderator.
    X-Ray Negative Upper GI Bleeding—Irving B. Brick, M.D., Washington, D. C.
    Technical Factors in Control of Bleeding at Operation—Vallee Willman, M.D., St. Louis.
    (Third panelist and title to be announced.)
10:30 a.m. Intermission to view exhibits.

11:00 a.m. Scientific session.
Hemophilus Influenzae Infections in Early Life—William L. Bradford, M.D., Rochester, N. Y., winner of the Missouri University Medical Alumni Award for 1965.
11:30 a.m. Scientific session.
Sex and the Role of the Practicing Physician—William H. Masters, M.D., St. Louis.
12:00 noon University of Missouri Alumni Luncheon.
1:30 p.m. Scientific session.
(To be announced. Sponsored by MSMA Committee on Anesthesiology.)
1:30 p.m. Economics session.
(To be announced. Sponsored by MSMA Committee on Medical Economics.)
3:00 p.m. Intermission to view exhibits.
3:30 p.m. Scientific session. (Sponsored by Missouri Heart Association.)
Current Concepts in Heart Disease—Albert M. Estes, M.D., Cape Girardeau, moderator.
Surgical Management of Acquired Valvular Heart Diseases—Arthur C. Beall, Jr., M.D., Houston, Texas.
Diagnosis and Medical Management of Heart Block—Noble O. Fowler, M.D., Cincinnati, Ohio.
Cardiac Pacemaker Implantation for Stokes-Adams Disease—Howard A. Frank, M.D., Boston, Mass.
3:30 p.m. Scientific session.
Acute Cervical Spine Trauma—Richard E. Lord, M.D., St. Louis, moderator.
The Cervical Disk—Earl P. Holt, M.D., St. Louis.
Psychiatric Mechanisms in Post-Traumatic Neck Pain—Jackson Smith, M.D., Chicago, Ill.
Methods of Treatment—J. William Fielding, M.D., New York, N. Y.
5:00 p.m. Intermission to view exhibits.
7:30 p.m. Banquet honoring Past Presidents of MSMA.
Practice, Learning and Progress—Vernon E. Wilson, M.D., Dean and Director of the University of Missouri School of Medicine.

Wednesday, April 7

7:30 a.m. House of Delegates meeting, breakfast and final session.

(This is the preliminary program for the 1965 Annual Session of MSMA and is subject to later changes and revisions.)

THE MISSOURI SOCIETY OF MEDICAL TECHNOLOGISTS

1965 Annual Meeting

Chase-Park Plaza Hotel, St. Louis

April 4, 5, 6, 7

Sunday, April 4

At St. John's Mercy Hospital.
Afternoon—Business meeting, Missouri Society of Medical Technologists.
Evening—Business meeting, Missouri Association of Blood Banks.

Monday, April 5

At Stockholm Room, Park Plaza.
Morning—Aspects of Modern Blood Banking. (Sponsored by Missouri Association of Blood Banks.)
Afternoon—Problems of Hematology and Coagulation.

Tuesday, April 6

Morning—Specialized techniques in Isotope Studies and Chromosome Analysis.
Afternoon—Microbiology and Related Topics.

Wednesday, April 7

Morning—New techniques and concepts in Clinical Chemistry.

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*This one at Oak Creek, Castle Rock, Arizona

References: 1. Hock, C. W.: Clin. Med. 8:1932, 1961. 2. Marks, L.: Am. J. Gastroenterol. 27:180, 1957. 3. Palmer, W. L., and Kirsner, J. B.: Therapeutics in Internal Medicine, 2nd ed., F. A. Kyser, Ed., Hoeber, New York, 1953, p. 368. 4. Ryan, J. P., Jenkins, H. J. and Robinson, S. M.: J. Pharmaceut. Sciences 53(9):1084, 1964. 5. Vollmer, H.: Arch. Neurol. & Psychiat. 43:1057, 1940. Abst. J.A.M.A. 115:333, 1940. 6. Wharton, G. K., Balfour, D. C., Jr., and Osman, K. I.: Postgrad Med. 21:406, 1957.

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MSMA Council Okays MD-DO Liaison Plan

The Council of Missouri State Medical Association has approved creation of a joint liaison committee consisting of representatives of the Association and the Missouri osteopathic organization. The new committee would be charged with examining problems common to both groups and planning cooperative actions which might prevent major future problems. The proposal for the liaison arrangement was made by the Greene County Medical Society and was outlined for the Council by Dr. Glenn O. Turner of Springfield, who is chairman of a similar committee at the county level.

The Council, meeting in St. Louis on December 12 and 13, also approved a report on osteopathy which will be submitted to the House of Delegates during the annual session in April. At that time, the House will be asked to clarify several points of MSMA policy regarding M.D.-D.O. relationship both on the individual and group basis.

The Executive Secretary, T. R. O'Brien, reported on the various legislative proposals which probably will come before the 1965 session of the Missouri General Assembly. Another so-called "good Samaritan" bill will be introduced; a new version of a "battered child" law is a probability; and the state Mental Health Association may attempt to change the make-up of the Mental Health Commission.

Dr. Charles B. Wheeler of Kansas City, chairman of the MSMA Committee on Laboratory Medicine, reported that his committee favors the creation of a state board of medicolegal examiners. The Council voted to support such legislation in 1965, and also to work for passage of a bill to revise the old county coroner system. Doctor Wheeler also won approval of a proposal for introducing a measure which would declare the processing of blood for transfusions to be a medical service and not a sale, in the commercial concept of that word.

Dr. Doyle C. McCraw informed the Council that Dr. Durward Hall of Springfield, who represents Missouri's 7th District in Congress and who is a Missouri Delegate to the American Medical Association, will be a candidate for President-Elect of AMA in June of 1965. Doctor McCraw and Dr. Stanley S. Peterson urged that MSMA do everything possible in support of the candidacy. The Council approved the appointment of a special committee to solicit backing for Doctor Hall.

The Council approved a budget of $242,200.00 for the 1965 fiscal year. This compares with a 1964 budget of $224,851.00.

Dr. H. M. Hardwicke, acting director of the state Division of Health, called on the Medical Association to do all it can to assure an adequate budget for the Division of Health in 1965-66.

Council members attending the meeting were:

Byron M. Stuart, M.D., Chairman, 5th District
Hector W. Benoit, Jr., M.D., Vice Chairman, 7th District
Lysle M. Bach, M.D., 2nd District
David N. Kerr, M.D., 3rd District
Paul R. Rother, M.D., 4th District
Rolla B. Wray, M.D., 6th District
Doyle C. McCraw, M.D., 8th District
E. A. Stricker, M.D., 9th District
W. D. English, M.D., 10th District
Leonard T. Furlow, M.D., MSMA President
Paul R. Whitener, M.D., MSMA President-Elect
John I. Matthews, M.D., MSMA Secretary
Charles R. Doyle, M.D., MSMA Treasurer

The next Council meeting will be held February 13 and 14.

This Council report covers only the highlights of the December meeting. The complete official report of Council proceedings is on file in the Executive Office of MSMA and is available for examination by any interested member of the Association.

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Helen Penn Retires; 34 Years With MSMA

A veteran employee of the Missouri State Medical Association, Miss Helen Penn, retired January 1, 1965 after completing 34 years of service with the organization. Miss Penn joined the executive office staff in 1930 when the late Edward J. Goodwin, M.D., was full-time Secretary of the Association and Editor of Missouri Medicine. She served as Doctor Goodwin's assistant in both capacities.

A native of Kahoka, Missouri, Miss Penn had extensive education and training before coming to the Association office. She attended old Howard Payne College (now a part of Central Methodist College in Fayette), received a Bachelor of Science degree from the University of Chicago and a Bachelor of Journalism from the University of Missouri. She acquired practical experience, first as a bacteriologist and then as a journalist, providing her with an enviable background for scientific journalism.

Through years of depression, world war, transition and change, MSMA benefited greatly from Miss Penn's intelligence and experience. Executive Secretary T. R. O'Brien observed that she furnished the single thread of continuity in operation of the executive office through those years. "There were several times that the office might well have fallen apart at the seams, except for the dedication and know-how of Helen Penn," he said.

In 1942 she was named Assistant Editor of Missouri Medicine and began concentrating most of her attention on publication of the monthly journal and preparation of the numerous reports and documents associated with the Annual Session. She became a member of the Medical Writers' Association and served one term as a member of its board of directors.

The decision to retire was made during the past fall on advice of her physician, but Miss Penn plans to keep busy. She is currently planning a trip. Then, she hopes to be able to devote more time to things she has had too little time for in the past. She has been active and held office in the St. Louis chapters of Zonta International and the American Association of University Women. She also has a lot of "pleasure reading" to catch up on.

AMA delegates concentrate on work during session of the House (l. to r.) Drs. Oscar P. Hampton, Jr., Arthur W. Neilson, Richard H. Kiene, H. E. Petersen, Durward G. Hall.

State Has 'Full House' At AMA Interim Meet

Missouri State Medical Association was fully represented at the recent meeting of the American Medical Association in Miami Beach. All of the official Delegates—Drs. Durward Hall, H. E. Petersen, A. W. Neilson and Richard H. Kiene—were present and attended all meetings of the House of Delegates.

In addition to the official Delegates, Missouri was also represented by Alternate Delegates Drs. Guy M. Magness and Hugh E. Stephenson, MSMA President Dr. Leonard T. Furlow, President-Elect Dr. Paul R. Whitener, Speaker of the House Dr. Stanley S. Peterson, Executive Secretary Mr. T. R. O'Brien and Field Secretary Mr. Raymond McIntyre. Missouri was represented by one or more of its "official family" at every hearing of the reference committees.

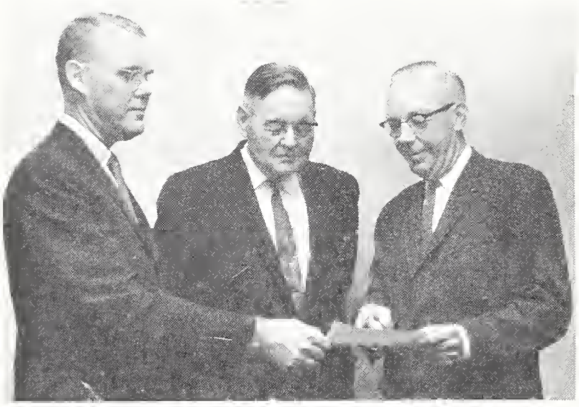
The most important piece of business before the Interim Session concerned the AMA's position on the "medicare-fedicare" issue. Despite a move for compromise, the House reaffirmed its opposition to any plan for a blanket program of health care for the elderly under Social Security. AMA President Dr. Donovan F. Ward called on physicians throughout the country to join in a renewed effort to defeat such a "medicare" plan when it is brought before Congress in 1965.

The House also elected Dr. James Z. Appel of Lancaster, Penn. to become the next President of AMA. A member of the Board of Trustees

(Continued on page 88)

Ramblings of the Field Secretary

As the year of 1964 drew to a close, the Missouri State Medical Foundation (MSMA's loan program for medical students) received two substantial financial transfusions. Leroy A. Weidle, Jr., president of the Knight Drug Company of St. Louis, presented the Foundation a check for $1,000. Mr. Weidle had this comment concerning the gift: "We know of no better way to show our appreciation of the many fine evidences of the friendship of so many physicians, than to make this gift to what we believe is their favorite charity."



Missouri State Medical Foundation student loan fund receives $1,000 donation. Mr. Leroy A. Weidle, Jr. (l.), head of a St. Louis drug company, presents check to MSMF Board of Trustee members Dr. Paul R. Whitener (c.) and Dr. Leonard T. Furlow (r.).

Another check for $2,000 was sent to the Foundation by the Boone County Medical Society. This represented money which remained from the Sabin Polio Vaccination program which was sponsored and conducted by the Society during the past fall.

Physicians of Missouri can take considerable pride and satisfaction from the work of their Medical Foundation. Since its inception in 1960, 289 loans have been made to 119 medical students, all residents of Missouri but not necessarily students in Missouri schools. These loans have totaled $134,435, and during the past year more than $5,000 in loan money has been repaid. It is expected that the repayment level will increase from year to year until the fund becomes, in a sense, self-perpetuating. By that time, it is also hoped that there will be at least a quarter million dollars in circulation, so any deserving Missouri student will be assured of financial support for his medical education.

Raymond McIntyre

AMA Interim Meet (cont'd.)

since 1957, Doctor Appel will assume the presidency during the Annual Session in June.

Missouri's veteran AMA Delegate, Doctor Petersen, was among the House members who were recognized and honored as they attended their final session. The St. Joseph pediatrician has served in the position for the past ten years, and his fellow delegates extended their appreciation for his work during that period. Doctor Kiene expressed the hope that Doctor Petersen will continue to serve organized medicine with "the wisdom of his counsel and experience."

Detailed reports of the AMA Interim Session may be found in recent issues of *The AMA News* and the *Journal of the American Medical Association.*

Missouri delegates and friends pose for portrait during special caucus. (l. to r.) Drs. Oscar P. Hampton, Jr., Guy N. Magness, Arthur W. Neilson, Durward G. Hall, H. E. Petersen, Richard H. Kiene, Leonard T. Furlow, Hugh E. Stephenson, Jr., Stanley S. Peterson.

Of 425 patients with confirmed G.I. infections... 387 or 91.1% were treated successfully with Signemycin®

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*Loughlin, E. H. et al.: Antibiot. Med. 7:739, Dec., 1960.

Condition	No. of Patients	No. Responded to Signemycin
Amebiasis	237	222
Cholecystitis and cholangitis	105	97
Enteritis	41	31
Peritonitis	15	14
Various, including pancreatitis, appendicitis and colitis	27	23
Totals	425	387 (91.1%)

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Brief Summary and Bibliography follow.

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medical melange

Notes of interest from Here . . . . and There

A single dose of a hormone drug, given by mouth, provides a safe and highly accurate means of diagnosing pregnancy as early as the fourth or fifth week, a study by two St. Louis physicians indicates. The drug used is oral medroxyprogesterone (Provera); the test requires no laboratory equipment, may be set up in from three to five minutes and read in two hours, according to Drs. Roy A. Walther, Jr., and William R. Platt of Missouri Baptist Hospital and Washington University School of Medicine.

Walt Disney murals will decorate the walls of the new Children's Mercy Hospital in Kansas City. Joyce C. Hall, head of the well known Hallmark greeting card company and honorary chairman of Mercy's current fund raising campaign, made the arrangements through personal contact with Disney. The world-famous cartoonist is a former Kansas Citian.

By the end of 1964, an estimated 149 million Americans were protected by some form of health insurance, the Health Insurance Institute reports in a review of the past year. This figure represents 78% of the U. S. civilian population, and is an increase of 3.7 million persons over the number protected in 1963. Benefits paid to insured persons last year were estimated at $8.6 billion or some $800 million more than in 1963. These benefits were paid by over 1,800 insuring organizations including 903 insurance companies, 77 Blue Cross and 72 Blue Shield plans, and nearly 800 other health care plans.

The U. S. prescription drug industry held an upward trend on all phases of operations during 1964 except prices and introduction of new drugs. Both were down from 1963. The Bureau of Labor Statistics consumer price index for prescription drugs now stands at 91.1 or 9% below 1958-59 and 16.9% below the all-items index. Between 1955-59 inclusive, the industry introduced 231 new drug entities; between 1960-64, it produced 146 new entities. The year ending saw the smallest number of new drugs introduced to the market, 15 as of November 30.

The first animal bone material to be approved by the U. S. Government for transplanting into humans has been announced after eight years of research by E. R. Squibb & Sons. The new product, called Boplant, is calf bone and cartilage that is processed chemically to make it compatible to humans. It was approved recently by the Food and Drug Administration and is now being made available to surgeons and hospitals for the more than 700,000 bone transplantations performed each year in this country. It has already been used successfully in more than 5,000 patients.

A new publication describing selected research studies in the area of mental health has been issued by the Public Health Service of the U. S. Department of Health, Education, and Welfare. "Research Project Summaries" contains descriptions of 19 projects sponsored through the research grants program of the National Institute of Mental Health. Among the projects described are a number dealing with various aspects of schizophrenia, most prevalent of the mental illnesses; research into the working of the brain, both chemical and psychological in nature; studies of dreaming and sleep; an investigation into the use of hypnosis; and studies on learning, emotions, sensory experiences, effects of drugs, and a variety of others. Single copies of the booklet, Public Health Service Publication No. 1208, can be obtained without charge from the Public Health Service, Washington, D. C. 20201.

(Continued on page 94)

Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded to Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

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medical melange (cont'd.)

A businessman and his wife, who believe medicine is losing the country's best young minds to other sciences, have given four New York City medical schools $320,000 to create the first American Merit Medical Scholarship Program. The Lucien and Ethel Brownstone Foundation announced grants of $80,000 each to the Columbia University College of Physicians and Surgeons, New York University School of Medicine, Albert Einstein College of Medicine of Yeshiva University, and Cornell University Medical College. Mr. and Mrs. Brownstone said they were establishing the scholarship endowments "to stimulate the most innately gifted, best educated and most mature individuals to enter the complex and humane field of medicine." They noted that of the 121 young "Presidential Scholars" named this year, only one was planning a career in medicine.

On January 1, 1965 the Physician's Wine Appreciation Society of New York, composed of more than 200 doctors, conducted a "Hangover Clinic" for members who may have celebrated too earnestly New Year's Eve. From 1 p.m. to 4 p.m. the doctors served French 75's—made with three ounces of French Champagne and one ounce of Cognac—to the members of their society. Said Dr. Herbert Gould of White Plains, New York, president of the society: "Champagne and Cognac, when mixed together, are known throughout the civilized world for their effect in helping restore energy and vigor and in combatting indications of melancholy and depression. Just the thing for New Year's Day!" Also available at the Hangover Clinic: packets of Bayer Aspirin.

Blood sugar tests are far more accurate than urine tests in detecting possible diabetes, but a firm diagnosis of the disease requires exhaustive retesting, three leading authorities agree. When the blood sugar level is 140 milligrams per 100 milliliters or higher about two hours after a meal, diabetes is strongly suggested. But a level as low as 110 milligrams usually warrants further investigation, depending upon the patient's age and other factors, the clinicians said. Their observations are reported in a symposium in the current issue of *Diabetes—Research, Detection, Therapy,* a publication of The Upjohn Company.

The first specific medication for the treatment of the superficial fungous infection, tinea versicolor, has been introduced by the Schering Laboratories. Known as Akrinol (acrisorcin), the compound has been found to have antifungal activity against Malassezia furfur, the causative organism for tinea versicolor. The drug has been studied by several hundred dermatologists during the last few years. The new agent produced "good to excellent results" in 39 of 40 patients observed by Dr. Erwin H. Zimmerman of Huntington, N. Y., whose report appeared in the *Journal of the American Medical Association* in April, 1961.

Environmental influences from the ultravirus to the megalopolis and the manner in which they affect man, his health and well-being will be the subject of AMA's Second Congress on Environmental Health Problems to be held April 26-27 at The Drake in Chicago. The Congress, based on the theme "Population, Environment and Health," will explore population problems, changing environmental influences, changing disease patterns, control and prevention of disease and urban planning for healthful living. National leaders from the fields of medicine, microbiology, aerospace medicine, sociology, virology, communicable disease and urban planning will participate.

WASHINGTON

As this issue of Missouri Medicine is being printed the American Medical Association is seeking to arrange the introduction in Congress of a health-care-for-the-aged program, countering the Johnson administration's proposal. AMA President Donovan F. Ward described the plan as a comprehensive one which would utilize Blue Cross, Blue Shield and other private health insurance companies as intermediary agents between the government and the individual.

Under the AMA proposal, citizens over 65 years of age would submit a simple information return to the appropriate state agency outlining income from all sources. On the basis of this return, an individual with income within limits set by the states would become eligible for benefits. Elder citizens would purchase through the private insurance companies their medical, surgical and hospital coverage and would pay all or none of the cost, depending on their income.

Doctor Ward pointed out that such a program would provide broad health care benefits, rather than the limited hospital and nursing home care which is offered by the administration's proposal. Eligibility could be determined quickly and could be established before the individual is actually stricken by illness and in need.

The AMA President reported that the new plan was prepared with the assistance and counsel of representatives of the American Hospital Association, Blue Cross and Blue Shield, the Health Insurance Association of America and the American Dental Association. Doctor Ward said that the AMA plan would accomplish far more than the so-called "medicare" program tied to Social Security and would eliminate the "evils of unpredictable expense, invasion of medical practice by the federal bureaucracy or disruption of the private health insurance industry by the government."

Before the AMA proposal was announced, Senator Clinton P. Anderson (D-N. M.) and Representative Cecil R. King (D-Calif.) had already introduced the 1965 version of their King-Anderson bill . . . S-1 in the Senate and HR-1 in the House. This measure would provide specified amounts of hospital and nursing home care for all persons over 65 years of age, regardless of income or need. It would be financed by increases in the Social Security tax.

The administration program would also bring self-employed physicians under Social Security.

President Johnson has also asked Congress for a far-reaching program of diagnosis, treatment and stepped-up research on heart disease, cancer, stroke and "other major diseases." This would be carried out over a five year period through a network of 32 health centers, working in coordination with established medical schools, hospitals and other community facilities.

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Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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FRANK F. WILSON, III, M.D., *Kansas City*

Advanced Abdominal Pregnancy

Case Report

A case report of an advanced abdominal pregnancy which was suspected during the antepartum period while being followed in the prenatal clinic. In addition to discussion of the case, the author briefly reviews literature on the treatment and management of the placenta. Dr. Wilson is with the Department of Obstetrics and Gynecology, Kansas City General Hospital and Medical Center.

Abdominal pregnancy, a onetime rare entity, has been noted with increasing frequency in the obstetrical literature. This increase in incidence can be attributed, primarily, to the introduction of antibiotics in the treatment of pelvic inflammatory disease. The high rate of infertility, secondary to pelvic inflammatory disease, which was noted at one time, is now decreasing with a resulting increase in ectopic gestation which is due to tubal damage as opposed to severe tubal destruction.

The purpose of this paper is to present a case of advanced abdominal pregnancy which was suspected during the antepartum period while being followed in the prenatal clinic. The diagnosis being suspected, the patient was admitted to the hospital where confirmatory studies were carried out, resulting in the delivery of a term size infant with no recognizable congenital anomalies but with the development of a maternal chorio-amniotic cyst.

Case Report

A 28-year-old gravida 2, para 1, abortus 0, Negro female was first seen in our prenatal clinic on August 9, 1963. Her LNMP was on Feb. 21, 1963, and her EDC was calculated to be Nov. 27, 1963. She was asymptomatic at that time but had been seen in the emergency room two days prior with complaints of nausea, vomiting and low back pain. She denied vaginal bleeding. A diagnosis of hyperemesis gravidarum was made and she responded to symptomatic treatment.

Initial physical examination in the clinic revealed a normal female at approximately five months gestation. No abdominal or pelvic abnormalities were recorded. Initial laboratory studies were within normal accepted limits, except for a mild anemia and a significant pyuria and bacteruria. The patient was placed on iron therapy for the anemia. Her only previous pregnancy occurred three years prior and was an uneventful term delivery.

The patient was seen in the emergency room on Aug. 14 and 20 and Sept. 11 with similar complaints of nausea, vomiting, diarrhea, low back pain, abdominal pain, and feeling unusual lumps (fetal parts), in the upper part of her abdomen. On the Aug. 20 visit she complained of minimal vaginal bleeding lasting 45 minutes. Symptomatic treatment was administered with no specific diagnosis being made on either occasion.

At her fifth clinic visit on Oct. 11 the patient was seen by the author, and an abdominal pregnancy was suspected due to the unusual ease in palpation of the fetal parts abdominally. X-ray of the abdomen revealed a fetus lying high and anterior in the abdomen. A definite outline of the uterus was not demonstrable, but the fetal position and the position of the bowel pattern suggested the presence of an abdominal pregnancy (fig. 1). The patient was next admitted to the hospital for further confirmatory test.

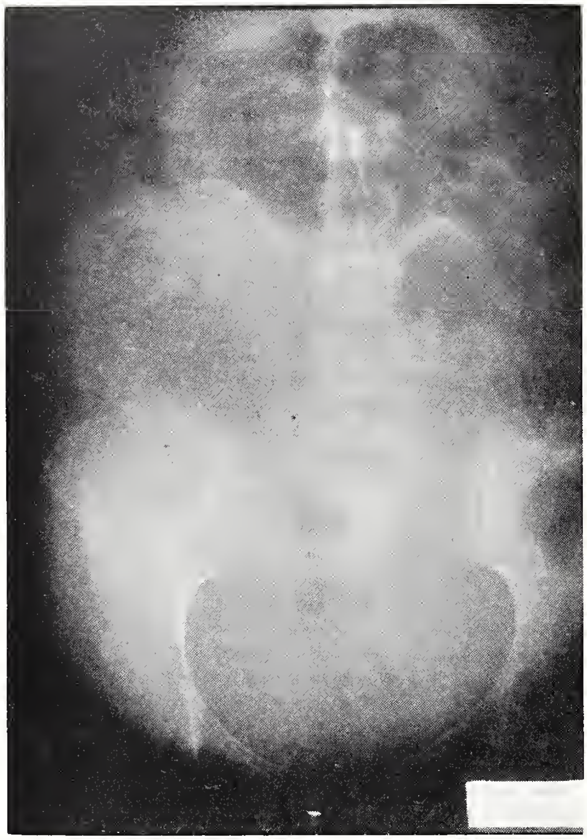

Fig. 1 KUB of the abdomen visualizing the fetus in a transverse position without visualizing a definite uterine shadow. The maternal bowel pattern is projected over the fetal parts.

Review of the patient's history at this time failed to elicit symptoms of a "tubal accident" at six to twelve weeks gestation, but two weeks after her LNMP she noticed pain in her upper abdomen which persisted approximately one week.

The only significant and consistent first trimester symptom was that of persistent nausea which increased to the fifth month when she was seen in our emergency room. She did admit that "something felt different with this pregnancy."

Physical examination again revealed the fetus lying in the transverse position, high in the abdomen with the fetal parts readily palpable beneath the abdominal wall, and an inability to palpate the round ligaments. Vaginal examination revealed the cervix to be soft and in a posterior position. The uterus was not palpable as a separate mass from the fetus. Laboratory studies again revealed a moderate anemia of 8.5 gms. hemoglobin per 100 cc. which was treated with 1,000 cc. of whole blood and a significant pyuria and bacteruria which responded to oral Furadantin therapy. Lateral film with the mother in the recumbent position revealed the fetal skull over-riding the maternal spine (fig. 2).

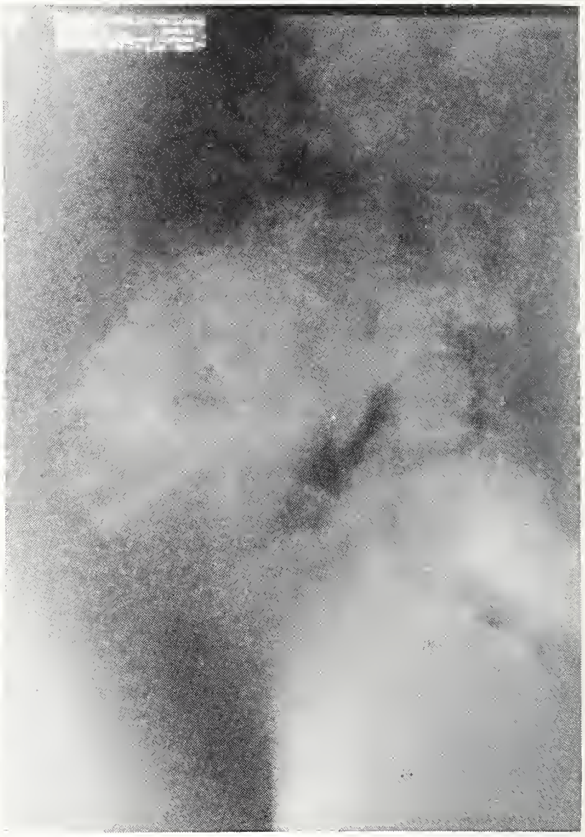

Fig. 2 Lateral plain film of the abdomen with the patient in the recumbent position. The fetal skull can be noted overlying the maternal skeleton.

Further diagnostic studies included:

(1) Pitocin Stimulation Test using 10 units of Syntocinon in 500 cc. of 5% Dextrose in water —produced no palpable uterine contractions.

(2) Hysterosalpingogram—revealed an opacification of the uterine cavity which was slightly larger than normal, displaced to the left and completely separate from the fetus (fig. 3).

(3) Retrograde femoral aortogram—demonstrated a large placental mass overlying the bladder with a lateral extension to the right and a third part lying superiorly in the region of the mid-abdomen, the fetus being extra-uterine (fig. 4).

After weighing the hazards of procrastination, in hopes of delivering a living-term infant, versus immediate delivery, it was decided to deliver the infant at the end of 36 weeks gestation.

On Nov. 1, after 6,000 cc. of blood had been typed and cross-matched, a celiotomy was carried out using a right paramedian incision under general anesthesia. On opening the abdomen, the fetus was readily visualized within a thick amniotic sac. The sac was opened and a 6 lb. 3 oz. viable male infant was delivered breech first. No effort was made to remove the placenta but the umbilical cord was doubly ligated near the base with "0" chromic catgut suture. The placenta was noted to lie on the posterior aspect of the uterus and right adnexa, extending laterally over the small intestine, anteriorly over the lower anterior abdominal wall, and posteriorly over the sigmoid colon. After removal of all excess amniotic fluid, the abdomen was closed without drainage.

Post-operatively the patient did well except for an unexplained temperature elevation to 100.8 on the third day. Repeat urine analysis was normal. On the 15th post-operative day the patient was discharged.

One week after discharge, the patient noted a slowly progressive enlargment of the area where the placenta was located and a continuous dull right flank pain which radiated down the medial aspect of the right leg. At four weeks post-partum definite cyst formation was noted within the enlarging placental mass. Because of the persistence and severity of the right flank pain, the patient was readmitted to the hospital on Dec. 11, for further evaluation.

A repeat femoral aortogram on Dec. 14, six weeks post-partum, again revealed a large placental mass lying in the lower mid-pelvis, which appeared to have diminished only slightly in size but with the degree of vascularity unchanged when compared to the antepartum aortogram (fig 5). The two smaller placental masses in the right lower and mid-abdomen were again noted. An intravenous pyelogram revealed a right hydronephrosis and hydroureter. The dilated right ureter was not visualized below the iliac crest (fig. 6 A). The left renal collecting system was normal. Barium enema examination demonstrated extrinsic pressure upon the distal and proximal colon by the placental mass.

After staff consultations it was decided to treat the patient conservatively. The abnormal finding could represent ureteral compression secondary to placental cyst formation, but we were not able to definitely rule out physiologic hydronephrosis of pregnancy. The patient improved while in the hospital on symptomatic treatment and was discharged to the clinic on the 20th hospital day.

Repeat intravenous pyelograms on Jan. 14 and March 3, 1964 (fig. 6 B and C), again reveal mod-

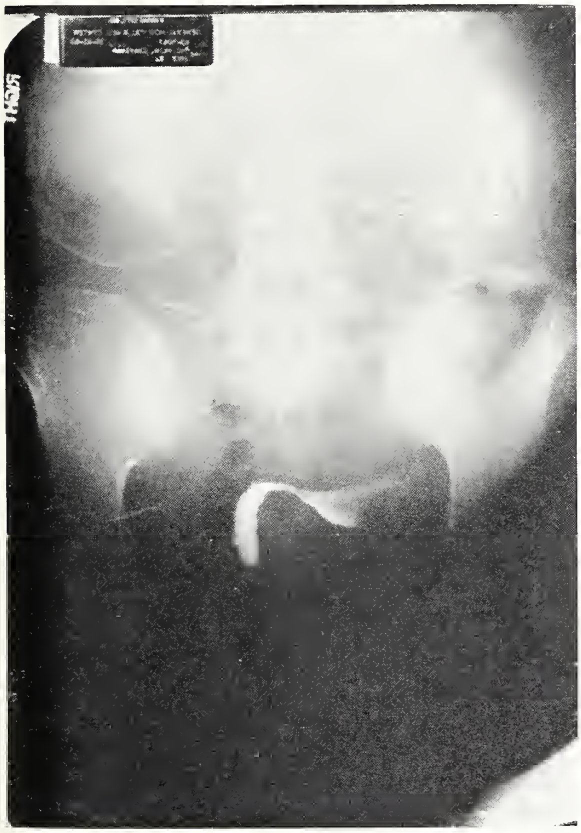

Fig. 3 Hysterosalpingogram with the opacified, slightly enlarged uterine cavity displaced to the left and separate from the fetus.

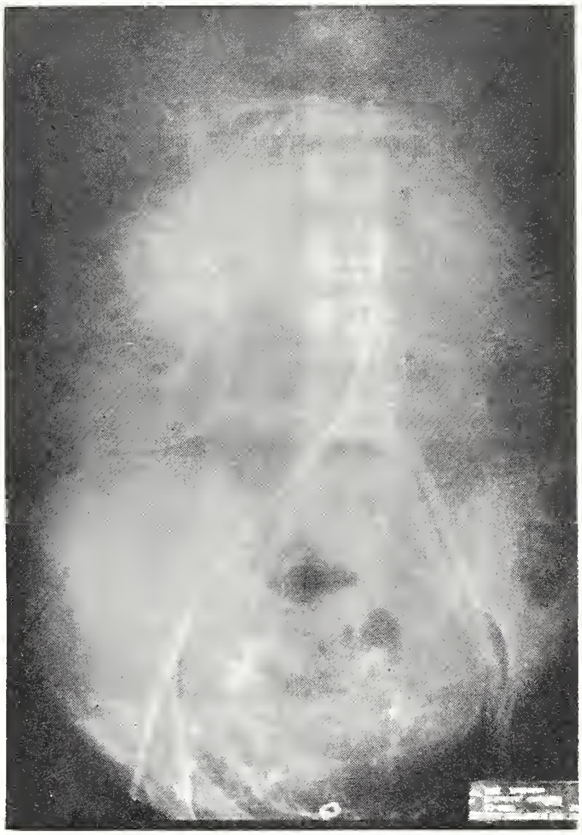

Fig. 4 Retrograde femoral aortogram visualizing a large extra-uterine placental mass overlying the bladder with a lateral extension to the right.

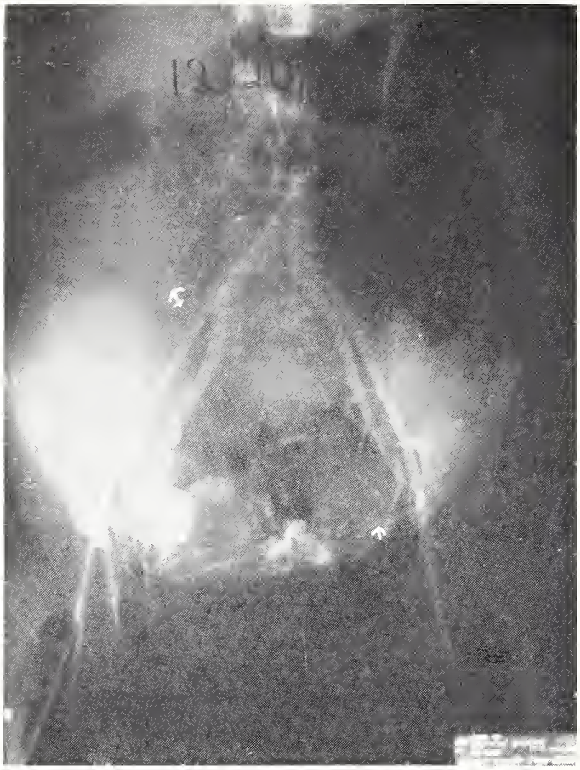

Fig. 5 Repeat femoral aortogram six weeks post-operative revealing placental vascularity only slightly changed from the antepartum state.

erate right hydronephrosis with slight reduction in calyceal and ureteral dilitation. The left collecting system remained within normal limits. The placental mass on March 3, showed only slight decrease in size. Clinically, on April 1, the placental cyst measured 26 × 21 cm. and is nontender. Currently the patient is asymptomatic and has returned to her usual daily routine four months following surgery.

Pregnancy test (UCG Test) was positive 28 days post-operative, but a repeat test 34 days post-operative was negative. Her first menstrual period was noted Dec. 9 through the 28th, 1963. Her periods are now regular, occurring every 28 days since Feb. 21, 1964, lasting three days.

DISCUSSION

Eastman[1] lists an incidence of ectopic pregnancy as 1:200 pregnancies, and Fielding[2] states that 1% of all pregnancies are ectopic and 1% of all ectopics go to term. Barret,[3] quoting the incidence of abdominal pregnancy to total deliveries, gives the high figure of 1:268; but the generally accepted incidence is 1:15,000.

Zuspan[4] feels that most cases of abdominal pregnancy arise from tubal abortion, partial or complete, with reimplantation outside the tube, whereas Eastman is of the opinion that the majority of cases are secondary to an early rupture of a tubal pregnancy into the peritoneal cavity. The trophoblast, after rupture, manages to maintain its previous tubal attachment and then generally extends its implantation over the surrounding peritoneum. It is felt that primary implantation in the peritoneal cavity is extremely rare.

A decided racial incidence has been noted, the majority of cases occurring in the Negro with an incidence varying from 4:1 to 16:1.[5, 6, 7] These figures represent the incidence in advanced abdominal pregnancy, while in early abdominal pregnancy no racial preponderance has been noted by Ware. This racial preponderance has been related to the high incidence of pelvic inflammatory disease and the delay in seeking medical assistance by the Negro.

Advanced extra-uterine pregnancy occurs with greater frequency in patients over 30 years of age, with 30 to 34 years as the median range. In Beacham's[8] series the youngest patient was 17 years and the oldest was 66.

DIAGNOSIS

The diagnosis of abdominal pregnancy rests chiefly on a "high index of suspicion." In general, any pregnant patient whose clinical course does not follow the normal pattern or who has unexplained abdominal pain should be suspected of having an abdominal pregnancy. Because of its rarity, preoperative diagnosis is made in only 35 to 50% of all cases.

In a review of the literature there seems to be general agreement that first trimester pain or discomfort and vaginal bleeding are the most frequent complaints. Many patients complain of intermittent abdominal discomfort throughout their pregnancy and numerous gastro-intestinal symptoms are prevalent, i.e., nausea, vomiting, and diarrhea, which are due to peritoneal irritation by the fetus. Most bleeding problems are encountered in the first trimester, but a few cases of intra-peritoneal bleeding secondary to premature spontaneous separation of the placenta have been recorded.[9]

Other signs helpful in the diagnosis include:

(1) Unusual ease in the palpating of superficial fetal parts.
(2) Unusually loud fetal heart tones.
(3) Inability to palpate the round ligaments or Braxton-Hicks contractions.
(4) False labor.
(5) Abnormally high position of a transverse lie of the fetus.

Pelvic examination frequently reveals the cervix to be long and undilated and often displaced anteriorly under the pubis. The uterus can often be palpated separately from the fetus. Zuspan using the modified Oxytocic Extract Test of Colvin and McCord, demonstrated that as early as 14 to 16 weeks of intrauterine gestation, IV Pitocin used in conjunction with a tokodynamometer will elicit palpable uterine contractions. Although this does not occur in extrauterine pregnancies, Eastman feels that this test is of value only if positive because the uterus may fail to respond in the course of a normal pregnancy.

Radiographic evidence supporting a diagnosis of extrauterine abdominal pregnancy includes:

(1) A fetus in an abnormal position, lying high in the abdomen, without demonstrable evidence of the uterine shadow.
(2) Fetal parts overlapping the maternal spine when a lateral film is taken with the patient in the recumbent position.
(3) Visualization of air in the intestine in the mid-abdomen.
(4) Visualization of the extrauterine fetus by the instillation of a radiopaque media into the uterine cavity or retrograde femoral aortography.

MANAGEMENT

While there is general acceptance that surgery is the treatment of choice for abdominal pregnancies, there is much disagreement both as to the optimal time to operate once the diagnosis has been established and the management of the placenta at surgery.

Many feel that operative intervention is mandatory once the diagnosis has been made.[1, 8] This feeling is encouraged by:

(1) A high fetal mortality.[4]
(2) A high maternal mortality associated with premature separation of the placenta.[10]
(3) A high incidence of congenital malformations as evidenced in the small percentage of infants that survive to the period of viability and are born alive and normal.[7]

Ware[11] in reviewing 249 cases of abdominal pregnancy above 28 weeks of age recorded a fetal mortality of 75%, while Yahia and Montgomery recorded a fetal mortality of only 38% in a series of 13 cases.

Other authors, however, feel that if the diagnosis of abdominal pregnancy is made with an infant near the period of viability, one is justified in delaying surgery until the 36th to 38th week of gestation with hopes of increasing fetal survival.[12, 13]

If the fetus is dead, opinions are again divided. Many feel that surgery should be deferred ten days to six weeks to allow for regression of the placental circulation,[14] whereas Eastman feels that the danger of infection, perforation of the bowel, or spontaneous separation of the placenta is too great to warrant waiting.

Management of the placenta is also a subject of controversy. Hreshchyshyn,[14] in a review of the literature, noted that some authors were in favor of initial removal of the placenta when its blood supply can be easily ligated. With this approach, one can achieve a significant decrease in

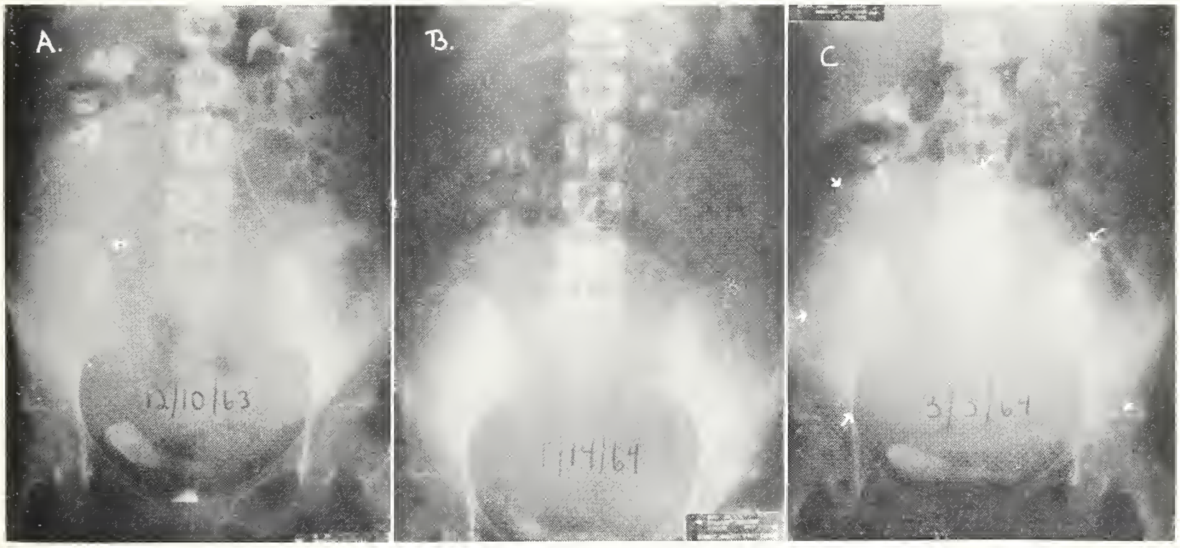

Fig. 6 (A) Intravenous pyelogram revealing a right hydronephrosis and hydroureter. Visualization of the right ureter ceases at the iliac crest. (B & C) Repeat pyelograms 11 and 17 weeks post-operative, visualizing minimal reduction in the degree of calyceal and ureteral dilatation. Slight reduction of the placental mass is noted.

post-operative morbidity; however, patients must be carefully chosen in order to prevent possible uncontrollable hemorrhage during manipulation of the placenta. For this reason, Eastman recommends leaving the placenta *in situ* and closing the abdomen without drainage. Impetus was given to this conservative approach when Beek[15] demonstrated in animal experiments that a normal placenta could be absorbed from the peritoneal cavity without harmful effects. Although as a result of this conservative approach maternal mortality has been significantly reduced, the incidence of postpartum complications requiring secondary operations has increased. Some of the complications noted are:

(1) Chorioamniotic cyst formation.
(2) Spontaneous intraperitoneal hemorrhage.
(3) Bacterial placentitis with sepsis.
(4) Spontaneous fistula formation with drainage through the abdominal wall, vagina, or bladder.
(5) Intestinal obstruction.
(6) Placental calcification.

Ware[11] has recommended post-operative antibiotic administration when the retained placenta is located over the intestines. Prior to the antibiotic era, marsupialization was used in infected cases, but Hreshchyshyn[14] has repeated successful treatment of infected cases by total removal of the retained placenta.

A decreasing maternal mortality has been noted in the literature. Douglass and Kohn[6] divided their series of 26 cases into two chronological periods, 1920-32 and 1933-44. In the earlier period the maternal mortality was 41.7% in 12 cases, but dropped to 21.4% in the 14 cases treated in the second period. Ware,[11] in reporting 249 cases collected between 1933-40, reported a maternal mortality of 14.85%. Crawford[9] and Ward recorded a maternal mortality of 10% in 1957. Most authors attribute this decreasing mortality to:

(1) More frequent correct pre-operative diagnosis.
(2) Improvement in surgical techniques.
(3) The availability of blood.
(4) Antibiotic therapy.

When the placenta remains *in situ* the Friedman or Ascheim-Zondek pregnancy test may remain positive for a variable length of time. Siegler, et al.[16] reported two cases in which the pregnancy tests remained positive for 28 and 30 days respectively. The longest recorded positive test was 53 days post-partum,[17] and the earliest negative test was recorded on the fifth day after delivery.[18]

SUMMARY

A case of advanced abdominal pregnancy suspected and diagnosed in the antepartum period is reported. In addition to a discussion of the diagnosis, a brief review of the literature concerning the treatment and management of the placenta is reported.

Acknowledgment: Credit is given Dr. Seymour Haber of the Department of Radiology for his suggestion and performance of the femoral aortogram.

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May 15, 1965 is the deadline for submitting abstracts of papers to be presented at the American Heart Association's 1965 Scientific Sessions, scheduled for October 15-17 in the Hotel Americana, Bal Harbour, Fla. Papers should be based on original investigations in the cardiovascular field or related to such studies. Abstracts, briefly digesting results obtained and conclusions reached, should be limited to 250 words. Forms for submitting abstracts of papers may be obtained from Richard E. Hurley, M.D., American Heart Association, 44 East 23rd Street, New York, N. Y. 10010.

E. CUYLER HAMMOND, Sc.D. *and*
ORUS WILSON, M.A., *Jefferson City*

Smoking Habits and Disease in Missouri

A HIGH DEGREE OF RELATIONSHIP between cigarette smoking and death rates of men has been found in six previous prospective studies carried out in this country, Great Britain, and Canada.[1-6] In this paper, we will present findings on this subject in the first 34.5 months of follow-up in the Missouri segment of a large prospective epidemiological study which was started in 1959 and is still in progress.[7-10]

During the latter part of 1959 and early 1960, volunteer workers of the Missouri Division of the American Cancer Society enrolled 72,998 men and women, the mean date of enrollment being November 17, 1959. The study area encompasses 111 of the 114 counties of Missouri. Upon enrollment, each subject answered a detailed questionnaire covering many factors including past and present smoking habits. The subjects are traced once a year and are requested to fill out brief questionnaires once every two years. In the most recent completed follow-up, 99.8 per cent of the subjects were traced through September 30, 1962. (The next follow-up was started on October 1, 1963 and is still in progress.) When a death is reported, we request the Missouri Health Department to supply us with a copy of the death certificate; and when cancer is mentioned on a death certificate we request the doctor to supply additional information.

This request is confined to the records of 29,403 men between the ages of 40 and 89 who were traced through September 30, 1962. Of this group, 1,448 (4.9 per cent) were reported to have died; and we now have copies of the death certificates on 1,412 of them. Cancer was mentioned on 235 of the certificates and doctors have provided additional information on 91 per cent of them.

PHYSICAL COMPLAINTS

A list of various physical complaints was printed on the first questionnaire and the subject was asked to check "yes" or "no" after each of them to indicate whether or not he had the complaint "at present." Those who had a complaint were asked whether it was "slight," "moderate" or "severe." Of the 29,403 men, 8,868 said that they were currently smoking 20 or more cigarettes a day and 6,907 said that they had never smoked regularly. Table 1 shows the number and per cent of these smokers who reported having various complaints and the per cent of non-smokers who reported having the complaints. The percentages for the non-smokers have been adjusted to the age distribution of the cigarette smokers (this being necessary for comparability since the non-smokers tended to be older than the cigarette smokers).

Cough, shortness of breath and pain or discomfort in chest were all reported far more frequently by the cigarette smokers than by the non-smokers, the ratio being 3.93 to 1 for cough, 2.08 to 1 for shortness of breath and 1.54 to 1 for pain or discomfort in chest. Considering only subjects who reported these complaints to a moderate or severe degree, the ratios were 5.75 to 1 for cough, 2.77 to 1 for shortness of breath and 1.82 to 1 for pain or discomfort in chest. These findings are consistent with findings in histologic studies of changes in lung tissue in relation to cigarette smoking.[11, 12] Such studies have shown a high degree of association between cigarette smoking and: (1) hyperplasia and the occurrence of cells with atypical nuclei in bronchial epithelium, (2) hyperactive glands in the walls of bronchial tubes, and (3) changes in the lung parenchyma including rupturing of alveolar septums, fibrosis and thickening of the walls of arterioles and small arteries.

Loss of appetite was reported over three times as frequently by cigarette smokers as by non-smokers. One might expect this to be associated

A report on smoking habits and their relationship to physical complaints of 29,403 male residents of Missouri between the ages of 40 and 89. Mortality and hospitalization experiences are presented. Findings are in good agreement with previous studies on this subject. Authors are with the Missouri Division of the American Cancer Society and the Statistical Research Section of the Medical Affairs Department of the American Cancer Society, Inc.

TABLE 1

PHYSICAL COMPLAINTS REPORTED BY 8,868 MEN WHO SMOKED 20 OR MORE CIGARETTES PER DAY AND BY 6,907 MEN WHO NEVER SMOKED REGULARLY. AGE GROUP 40-89.

Physical Complaint	*Cigarette Smokers With Complaint* NO. OF MEN (a)	% (b)	*Non-Smokers With Complaint* % (c)	*Ratio* (B) ÷ (C) (d)
Cough (slight, moderate, severe)	5,263	59.3	15.1	3.93
Cough (moderate or severe)	2,598	29.3	5.1	5.75
Shortness of breath (slight, moderate or severe)	3,501	39.5	19.0	2.08
Shortness of breath (moderate or severe)	1,521	17.2	6.2	2.77
Pain or discomfort in chest (slight, moderate or severe)	1,721	19.4	12.6	1.54
Pain or discomfort in chest (moderate or severe)	631	7.1	3.9	1.82
Loss of appetite	771	8.7	2.7	3.22
Loss of weight	628	7.1	5.7	1.25
Gain of weight	442	5.0	3.6	1.39
Hoarseness	1,113	12.6	10.2	1.24
Nausea or vomiting	585	6.6	5.0	1.32
Indigestion	2,965	33.4	27.3	1.22
Pain in stomach	1,409	15.9	12.0	1.33
Diarrhea	559	6.3	4.7	1.34
Fatigue easily	3,781	42.6	30.6	1.39

with loss of weight; and loss of weight during the preceding two years was reported somewhat more frequently by cigarette smokers than by non-smokers. However, gain of weight was also reported somewhat more frequently by cigarette smokers than by non-smokers. This suggests that fluctuations in weight may occur somewhat more frequently in cigarette smokers than in non-smokers.

A number of other physical complaints such as hoarseness, nausea or vomiting, pain in stomach, indigestion, diarrhea and a tendency to "fatigue easily" were also reported somewhat more frequently by cigarette smokers than by non-smokers. The picture in general indicates that cigarette smokers, as a group, tend to feel less physically fit than do non-smokers.

MORTALITY

Table 2 shows the men classified by type of smoking (lifetime history). The figures under the heading "observed" are the actual number of deaths reported from the start of the study through September 30, 1962. Figures under the heading "expected" are the number of deaths which would have occurred if the age-specific death rates in each group had been the same as the age-specific death rates of men who never smoked regularly. In other words, the age-specific death rate of the non-smokers is taken as a standard for comparison. The mortality ratio is the observed number of deaths divided by the expected number of deaths. By definition, the mortality ratio of the non-smokers is 1.00.

Men with a history of only cigarette smoking

TABLE 2

MORTALITY BY TYPE OF SMOKING

Lifetime History	*Age 40-69* *No. of Men*	NO. OF DEATHS Obs.	Exp.	*Mortality Ratio*	*Age 70-89* *No. of Men*	NO. OF DEATHS Obs.	Exp.	*Mortality Ratio*
Never Smoked Regularly	5,888	152	152.0	1.00	1,166	183	183.0	1.00
Pipe, Cigar Only	2,822	88	88.0	1.00	873	140	137.4	1.02
Cigarette and Other	5,828	207	143.6	1.44	549	98	76.1	1.29
Cigarette Only	11,671	471	232.6	2.02	606	109	82.6	1.32
Total	26,209	918	616.2	1.49	3,194	530	479.1	1.11

had by far the highest death rates (as indicated by their high mortality ratios). In age group 40 to 69, the death rate of such cigarette smokers was 102 per cent higher than the death rate of non-smokers; and in age group 70-89 the death rate of such cigarette smokers was 32 per cent higher than the death rate of non-smokers (fig. 1).

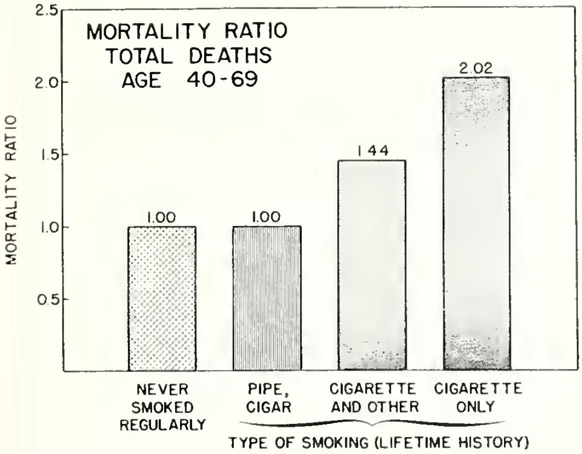

Fig. 1

The death rate of men who smoked cigarettes and also smoked pipes or cigars (i.e. the "cigarette and other" group) was somewhat lower than the death rate of men who smoked cigarettes only. This is accounted for by the fact that men with mixed smoking habits tend to smoke fewer cigarettes per day and tend to inhale the smoke less deeply than do men who smoke only cigarettes.

The death rate of pipe and cigar smokers was very close to the death rate of non-smokers. This appears to be due to the fact that the great majority of pipe and cigar smokers do not inhale the smoke or inhale it only to a slight degree.

Table 3 shows further details on current cigarette smokers (i.e. men who were smoking cigarettes regularly at the time they enrolled in the study) with a history of only cigarette smoking. It is confined to men between the ages of 40 and 69 for the reason that there were relatively few such cigarette smokers among men in the older age groups. Some of the figures (particularly some of the mortality ratios) are rather unstable statistically due to small numbers. Figures for non-smokers are included to give a basis for comparison.

The mortality ratio increased substantially with the number of cigarettes smoked per day and was higher among cigarette smokers who said that they inhaled the smoke deeply than among those who said that they did not inhale or inhaled only slightly. The cigarette smokers who took up the habit before they reached their 20th birthday had higher death rates than did cigarette smokers who started the habit later in life.

Death certificates indicated that coronary artery disease accounted for 638 (44.1 per cent) of the 1,448 deaths. Deaths from this cause were highly associated with the smoking habits of men in age group 40 to 69 but less highly associated with the smoking habits of men in age group 70 to 89. In the lower age group, the coronary artery disease mortality ratios were: 1.00 for men who never smoked, 1.21 for pipe and cigar smokers, 1.37 for men who smoked cigarettes and also smoked pipes or cigars and 1.79 for men who smoked only cigarettes.

Lung cancer accounted for 55 deaths (49 in age group 40-69 and 6 in age group 70-89). Two of these 55 men said that they had never smoked regularly and 4 said that they smoked pipes or cigars (but not cigarettes). All of the remaining 49 men who died of lung cancer had a history of cigarette smoking. The lung cancer death rate was approximately two and a half times as high among cigarette smokers who currently smoked a pack or more of cigarettes a day as among those who currently smoked less than a pack a day.

TABLE 3

MORTALITY BY AMOUNT OF CIGARETTE SMOKING, DEGREE OF INHALATION AND AGE BEGAN CIGARETTE SMOKING. AGE GROUP 40 TO 69.

Current Cigarette Smoking	*No. of Men*	*No. of Deaths*		*Mortality Ratio*
		OBS.	EXP.	
Cigarettes per day:				
1-9	648	20	15.1	1.32
10-19	1,479	63	33.6	1.88
20-39	5,384	217	96.7	2.24
40+	1,182	50	17.8	2.81
Degree of Inhalation:				
None	567	29	14.3	2.03
Slight	1,322	54	28.8	1.88
Moderate	4,653	180	85.1	2.12
Deep	2,124	85	34.2	2.49
Age Began Cigarette Smoking:				
25+	784	37	18.6	1.99
20-24	1,823	56	34.9	1.60
15-19	4,635	191	81.8	2.33
<15	1,161	51	21.6	2.36
Never Smoked Regularly	5,888	152	152.0	1.00

Previous studies have shown a relationship between smoking habits and the occurrence of cancer of the buccal cavity, pharynx, larynx, esophagus and bladder. Of 13 men who died of cancer of these sites, one said that he never smoked regularly and 12 were smokers.

Twenty-one men died of emphysema and only one of these was a non-smoker.

HOSPITALIZATION

At the time of the second follow-up (approximately two years after the start of the study) surviving subjects were requested to fill out a second questionnaire. On this questionnaire, they were asked whether or not they had been hospitalized since October 1, 1959 (the date the study was started). We assumed that all those who died had been hospitalized prior to death, this being true in the great majority of cases.

In Table 4, men aged 40 to 69 are classified in groups by their smoking habits as reported on the first questionnaire; and the per cent hospitalized is shown for each of these groups. For comparability, the percentages have been standardized for age on the basis of the age distribution of all the men in the study.

The general picture is much the same as that previously shown for total mortality. Only 15.2 per cent of the men who never smoked were hospitalized within two years while 21.5 per cent of men with a history of only cigarette smoking were hospitalized during the same period of time. Among current cigarette smokers, the risk of hospitalization increased with amount of smoking from 19.1 per cent for those who smoked one to nine cigarettes per day to 26.6 per cent for those who smoked 40 or more cigarettes per day. The per cent of men hospitalized was greater among cigarette smokers who said that they inhaled deeply than among those who said that they did not inhale; and was greater among men who started to smoke cigarettes early in life than among those who started to smoke later in life.

TABLE 4

PER CENT OF MEN HOSPITALIZED BETWEEN START OF STUDY AND SECOND FOLLOW-UP (APPROXIMATELY 2 YEARS). MEN AGED 40-69 AT START OF STUDY. PERCENTAGES ARE STANDARDIZED FOR AGE ON THE TOTAL POPULATION OF ENROLLEES IN THE STATE.

Smoking Habits	*Per Cent Hospitalized*
Never Smoked Regularly	15.2
Cigar, Pipe	16.1
Cigarette and Other	18.7
Cigarette Only	21.5
Current Cigarette*	21.6
1-9 a day	19.1
10-19 a day	19.1
20-39 a day	21.5
40+ a day	26.6
Do Not Inhale	21.6
Inhale Slightly	19.2
Inhale Moderately	21.1
Inhale Deeply	23.6
Age Began Smoking:	
25 or older	17.4
20-24	19.8
15-19	22.9
Before age 15	23.6

* Men with a history of only cigarette smoking who were currently smoking cigarettes at the time of enrollment.

SUMMARY AND DISCUSSION

In this paper, we have reported on the smoking habits in relation to the physical complaints of 29,403 Missouri men aged 40 to 89; and have reported the mortality and hospitalization experience of this group of men during the first 34.5 months after they were enrolled as subjects in a prospective epidemiological study. The findings are in good agreement with findings previously reported from other epidemiological studies on this subject.

Cigarette smokers report physical complaints (particularly cough, shortness of breath and loss of appetite) more frequently than non-smokers,

(Continued on page 122)

Parke, Davis & Company has announced plans for the nation-wide distribution of measles vaccine. The vaccine was developed by Philips Roxane, Inc., of St. Joseph, Mo. and Columbus, Ohio, and recently approved by the federal government. The vaccine is the live, attentuated type and is indicated for preventive immunization against naturally occurring nine-day measles. The vaccine, according to the company, has produced no serious side effects during the clinical field trials involving approximately 130,000 children, and these trials proved the effectiveness of the vaccine, with predicted life-long immunity, in 94 to 97 per cent of those vaccinated.

CHARLES L. ROPER, M.D., FRANK A. CAMP, M.D.
and RICHARD L. KEMPSON, M.D., *St. Louis*

Atrial Myxoma Associated With Fibroadenomas of the Breast

Case Reports

Case reports on successful excision of lesions in two patients having intracardiac myxomas. Associated diffuse fibroadenomas of the breast were so extensive that bilateral mastectomies were performed. In each case, microscopic features of lesions were similar and distinguishable from usual fibroadenoma. Authors, Drs. Roper, Camp and Kempson of the Divisions of Thoracic and Cardiovascular Surgery and Surgical Pathology, Washington University School of Medicine, report that to their knowledge no other paper concerning such an association has been previously published.

In 1955, Crafoord reported the successful removal of an intra-atrial myxoma utilizing extracorporeal support. Although intracardiac myxomas have long been recognized, surgical attempts at extirpation met with unimpressive success prior to that date.[4, 5] Following the advent of cardiopulmonary bypass, numerous case reports have appeared in the literature which stress both usual and atypical clinical manifestations of atrial myxomas and emphasize the feasibility of removal.[1, 2, 3, 6, 7]

During the past two years, two patients with intra-atrial myxomas have been successfully operated upon. These patients demonstrated the classical symptoms and findings of this entity; of particular interest, however, was the occurrence in both cases of diffuse bilateral fibroadenomas of the breast with myxoid stroma.

Report of Cases

Case 1. A 33-year-old white female entered Barnes Hospital on June 14, 1962, with the history of having had sudden onset of acute left leg pain eight hours before admission. Three months prior to this episode she had developed a sudden right-side hemiplegia which had been diagnosed as a cerebral embolus, secondary to rheumatic heart disease with mitral stenosis. Anticoagulation therapy had been instituted. The patient gave no history of rheumatic fever, but for the past several years she had noted increasing exertional dyspnea and fatigue. Her past history also revealed that she had noted enlargement of bilateral tender breast masses during the preceding year.

Physical examination revealed a young white female who appeared to be in acute distress. Blood pressure 135/80, Pulse 104. A grade 2 apical systolic murmur was heard upon auscultation of the heart. Paresis of the right upper and lower extremity was apparent. The left leg was cold and cyanotic with a decrease in tactile sensation distally from the mid-thigh level. A pulse was palpable in the groin, but distal pulses in the leg were not detected. An ECG revealed a normal sinus rhythm with nonspecific S-T segment changes.

Immediate exploration of the left superficial femoral artery was performed. A localized atypical appearing clot was found just distal to the profunda takeoff. The clot was extracted without difficulty and return of all distal pulses was noted post operatively. The microscopic pathological diagnosis of the clot was myxoma.

One week later, angiocardiogram confirmed the presence of a left intra-atrial filling defect. On June 28, excision of the myxoma was carried out using extracorporeal support. A normal mitral valve was found. The patient's post operative course was uneventful.

In October, the patient was readmitted to the hospital on the general surgery service for extirpation of the breast lesions. Physical findings included a healed anterior thoracotomy incision and bilateral groin scars. No murmur was heard upon cardiac auscultation. Both breasts contained diffuse, but well demarcated, tender masses.

On October 30, bilateral simple mastectomy was performed. Microscopic examination of the tissue revealed chronic cystic disease with diffuse fibroadenomas of both breasts. The stroma of the fibroadenomas was myxoid.

The patient has continued to be asymptomatic since her last hospitalization except for continuing regression of her right hemiparesis.

Case 2. A 37-year-old white female was admitted to Barnes Hospital on July 12, 1963, with the chief complaint of nausea and a tingling sensation from the waist down, which had appeared suddenly four hours prior to admission.

Her past history revealed that she had undergone a left simple mastectomy in 1953 for an enlarging left breast mass which had first been detected in 1948. Microscopic examination of the specimen revealed multiple diffuse fibroadenomas. In 1960, a right simple mastectomy was performed after the patient had noted increasing pain and enlargement of this breast. The microscopic examination of the specimen revealed chronic cystic disease and diffuse fibroadenomas. Of interest is the fact that the pathologist at that time had noted unusual myxoid changes in the fibroadenomas. During the admission in 1960, an apical systolic murmur was first noted.

Significant physical findings upon this admission included a harsh grade 4 mitral systolic murmur together with a grade 3 mitral diastolic murmur. Pulse 150/min, Blood Pressure 140/82, Temperature 38° C. Auscultation of the lungs revealed bilateral basilar rales. Neck vein distention was apparent. Both lower extremities were cool but the femoral pulses were bilaterally palpable. No gross neurological defect was detected in the lower extremities. Laboratory data: hemoglobin 10.1 gms, wbc 17,500 with a marked left shift, urinalysis 2+ protein with 7-12 wbc's per high powered field. ECG revealed sinus tachycardia with occasional premature ventricular contractions. Cardiac roentgenograms showed left atrial enlargement, right ventricular enlargement, and pulmonary congestion.

The patient was digitalized during the 24 hour period following admission to the medical service. Four blood cultures were drawn and penicillin therapy was begun since her clinical picture suggested subacute bacterial endocarditis superimposed upon rheumatic valvular disease. Forty-eight hours later, increasing pain occurred in both lower extremities and both femoral pulses became markedly decreased in amplitude. An aortogram was performed which showed a saddle embolus with obstruction of both iliac vessels. Embolectomy was carried out immediately. The grossly atypical appearance of the embolus was suggestive of myxoma. Microscopic examination of the clot confirmed this clinical impression.

On July 23, an angiocardiogram revealed a left atrial filling defect, and the patient subsequently was scheduled for open heart surgery. On July 30, the patient suddenly became cyanotic and unresponsive while lying in bed. No heart beat was detected by a cardiologist who was present at the time and external cardiac massage was initiated. An ECG revealed ventricular fibrillation. An effective heart beat was re-established by means of electrical defibrillation. The patient then became slightly responsive and total body hypothermia was established in an effort to minimize possible cerebral edema resulting from this period of anoxia. Within 24 hours her mental status seemed normal except for a retrograde amnesia of the preceding events.

Hematological consultation was sought when a markedly positive Coombs test was encountered during the usual crossmatching of blood prior to open heart surgery. A course of steroid therapy was recommended and given for a 14 day period. On August 13, a large left atrial myxoma was excised using extracorporeal support. At operation the myxoma was found to prolapse easily through a normal mitral valve. It was postulated that such an episode of prolapse had occurred to account for the episode of ventricular fibrillation, and that with external cardiac massage the tumor had been ejected back into the left atrium. The patient's post operative course was uneventful, and she has been asymptomatic since her discharge from the hospital on August 23.

COMMENT

These two patients initially presented with embolic phenomena which are characteristic of left atrial myxoma. The fact that the diagnosis and subsequent surgical excision of these tumors was accomplished is, of course, dependent upon the

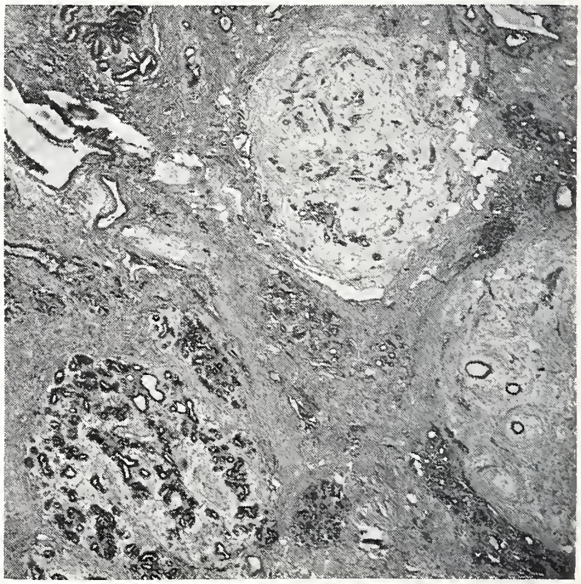

Fig. 1 Low power view of breast lesion in Case No. 1, showing nodules of delicate stroma and ducts separated by breast tissue. This change was found throughout both breasts (H & E, X 23).

now common usage of angiocardiography and the efficacy of extracorporeal support in such instances.

Of particular interest in these two cases was the association of the atrial myxoma with diffuse nodular lesions involving almost all of the breast parenchyma. Grossly, the nodules were pink and glistening. Microscopically the breast lesions from both patients were identical. Large areas of the breast parenchyma were replaced by nodules of delicate myxomatous tissue containing hyperplastic breast ducts. Many of the ducts were invaginated into slit-like spaces as are seen in the intracanalicular type of fibroadenomas. The individual nodules were separated by dense bands of collagenous tissue. The remaining portions of breast tissue showed severe chronic cystic disease (figs. 1, 2, 3).

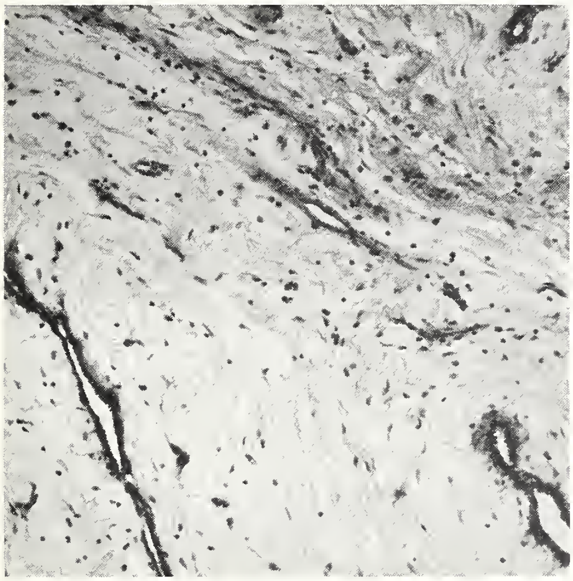

Fig. 2 Higher power view of a nodule in Case No. 1. Note delicate myxomatous stroma containing only a few nuclei. The ducts are elongated and flattened as seen in intracanalicular fibroadenomas (H & E, X 107).

The stroma of the breast nodules in these two patients was more delicate and less cellular than the usual fibroadenomas. The nodules exhibited a distinct myxoid appearance which resembles the histologic pattern of the intracardiac myxoma, except that the nuclear pleomorphism and multinucleated cells found in the myxomas were not present in the breast lesions (figs. 4, 5).

In reviewing the literature, we were unable to find cases of associated bilateral breast tumors and cardiac myxomas. A review of fibroadenomas from the files of the Surgical Pathology Department yielded no breast lesions with the features of these two cases. The unusual occurrence of fibroadenomas presenting as bilateral diffuse breast masses was also noted. Consequently we have designated these lesions as fibroadenomas with myxomatous stroma, a lesion which can be separated morphologically from the usual fibroadenoma.

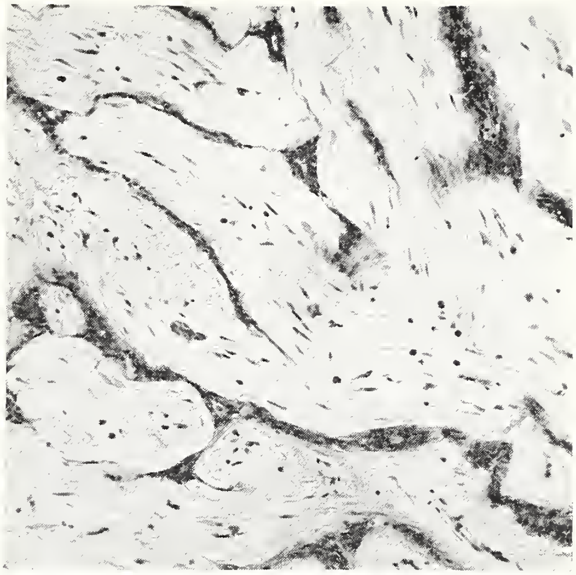

Fig. 3 Detail of breast nodule in Case No. 2, showing stroma and "slit-like" ducts (H & E, X 105).

Since only two patients presented with these

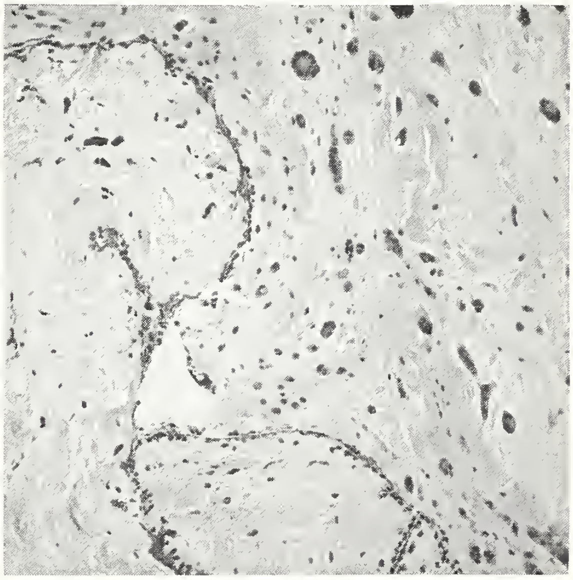

Fig. 4 Myxoma excised from the heart in Case No. 1. The stroma is delicate and wavy in some areas, but dense in other areas. Multinucleated cells are numerous (H & E, X 105).

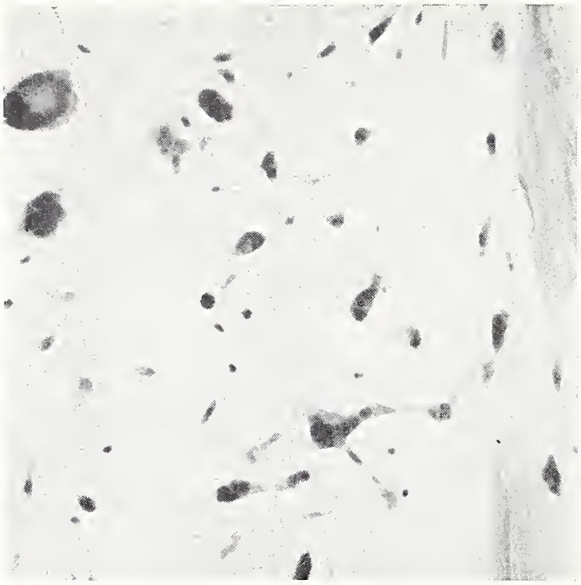

Fig. 5 Myxoma from the heart in Case No. 2. High power view, showing delicate myxomatous stroma and multinucleated round and stellate cells (H & E, X 373.5).

findings, one can only speculate as to the etiology of the concomitant breast and heart lesions. An attractive hypothesis is that of myxomatous changes in multiple organ systems.

Summary

In two patients having intracardiac myxomas, successful excision of the lesions was accomplished. Of specific interest in these cases was the occurrence of associated diffuse fibroadenomas of the breast which were so extensive that bilateral mastectomies were performed. In each instance, the microscopic features of these breast lesions were similar and could readily be distinguished from the usual fibroadenoma. In one patient, the unusual histologic pattern of the breast lesions was first noted by the surgical pathologists three years before the diagnosis of an intracardiac myxoma was established.

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Applications and letters of request from previous applicants requesting to be scheduled for the forthcoming Part I examination of the American Board of Obstetrics and Gynecology to be given July 2, 1965 will be accepted in the Board office up until the closing date of February 28. Applications and letters of request postmarked after that date will be returned to the sender. Application forms and Bulletins may be obtained by writing to the office of the Secretary—Clyde L. Randall, M.D., American Board of Obstetrics and Gynecology, 100 Meadow Road, Buffalo, New York 14216. Servicemen applying for the Part I examination are requested to submit the name of their Commanding Officer. Diplomates of this Board are requested to keep the Board office informed of address changes.

YAVUZ AYKENT, M.D. *and*
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Transient First and Second Degree Heart Block

With Wenckebach Phenomenon Without Organic Heart Disease

Case Report

Heart blocks are not always indicative of organic heart disease. A case report and review of the literature are used to emphasize the value of doing a few simple maneuvers in cases of heart block of obscure origin.

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Since the first descriptions of the Wenckebach phenomenon with a second degree heart block in 1899,[1] its presence has been regarded as strong evidence of organic heart disease. This concept has been confirmed by the common occurrence of heart block in different types of organic heart disease, in patients with acute infections such as rheumatic and scarlet fever, diphtheria and in digitalis intoxications. Heart blocks, however, especially lesser grades of atrioventricular blocks, are not always indicative of organic heart disease. First degree heart block in normal healthy persons is not an uncommon finding.[2-7] On the other hand, second degree heart blocks without organic heart disease are less common, and very few cases with Wenckebach phenomenon have been reported.[7, 10-16] This is believed to be due to increased vagal activity. The following case is reported as another example of such an etiology and indicates the importance of doing a few simple maneuvers in cases of heart block of obscure origin. They are extremely helpful for accurate diagnosis and may prevent unnecessary and sometimes dangerous treatment.

Case Report

A 15-year-old Negro school girl was first seen in the medical clinic of St. Louis University Hospital (Firmin Desloge Hospital) on April 2, 1962 with complaints of dull pain and aching in her knees and ankles of three weeks duration. There was occasional increase in intensity. There was no swelling, redness or tenderness in these or any other joints. The pain was not made worse by motion, but diminished on walking. During this three week period, she also had headaches, intermittent aching of both shoulders and vague chest pain which occurred anywhere over the thorax. The latter was described as a dull ache unrelated to respiration, with occasional sharp stabbing pain which lasted from a few seconds to a few minutes. One month before, she complained of a stuffy, runny nose and had a fever as high as 101° with occasional chills. She did not have a sore throat, cough or hemoptysis. There was no past history of rheumatic fever, arthritis or scarlet fever. The family history was unremarkable except that her mother had hypertension and one cousin had pulmonary tuberculosis.

Physical examination revealed a well developed, well nourished girl in no acute distress with a blood pressure of 95/55, irregular pulse at 56 per minute, temperature 98.6° and respirations 20 per minute. Examination of the mouth, tonsils, pharynx and lungs was negative. The heart size was normal by percussion. The point of maximum impulse was felt in the 5th intercostal space at the left mid-clavicular line. The apical rate equalled the pulse rate and there were occasional dropped beats. The intensity of the first heart sound varied from one cycle to another. Loudest at the 2nd and 3rd intercostal space along the left sternal border was a grade 2/6 low pitched mid-systolic innocent murmur whose intensity varied with respiration and position of the patient. The second heart sound was normally split. Abdominal examination was not remarkable. Knee and shoulder joints were tender but were not swollen, hot or red. This pain did not increase with motion. The neurological examination was negative. The electrocardiogram showed second degree atrioventricular block with Wenckebach phenomenon. The PR interval varied from 0.16 sec. to 0.28 sec. (fig. 1). The patient was hospitalized for complete diagnostic work up.

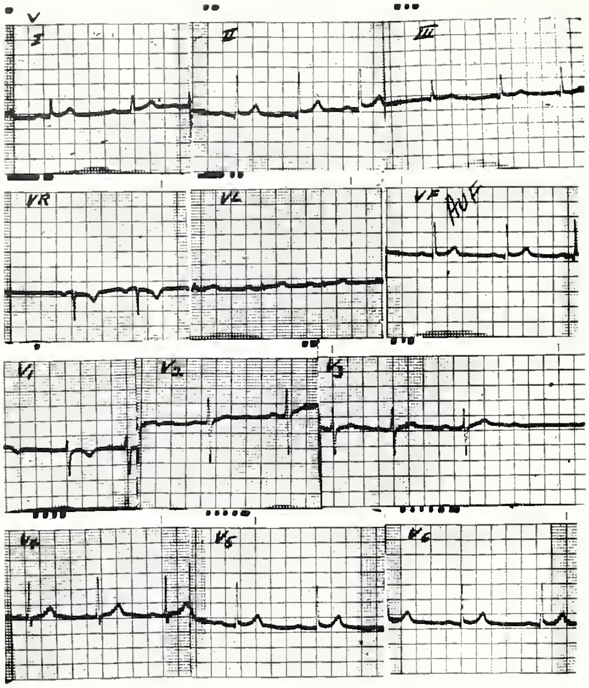

Fig. 1 Standard electrocardiogram showing 1st and 2nd degree A-V block with Wenckebach phenomenon.

The laboratory studies on admission showed: hemoglobin 12 GM %, hematocrit 37%, white cell count 5,500 with 53% segmented neutrophils, 33% lymphocytes, 2% stabs, 8% monocytes and 4% eosinophils. Urinalysis showed no sugar, acetone or albumin; specific gravity was 1.013 and microscopic examination was normal. Sedimentation rate was 6 mm. in one hour (Westergreen). The antistreptolysin O titer was 166 Todd units and the C reactive protein 1 plus. The first strength PPD and histoplasmin skin tests were negative. Latex agglutination was negative and heterophile agglutination was 1:14. Throat culture showed heavy growth of Neisseria and gamma streptococcus. Three blood cultures showed no growth. No significant increase in antibody titres against the following viruses were shown: influenza types, A. Asian, A prime, B.C.D., hemadsorption viruses types 1 and 2, croup associated adenovirus, and respiratory syncytial. Cold agglutinins were negative. No hemagglutinating viruses isolated from throat washings after two passages through embryonated eggs. Tissue cultures inoculated with throat washings grew no cytopathic or hemagglutinating agents after one passage. No cytopathogenic agent was isolated after two passages of stools in HeLa cells. Stools were inoculated into suckling mice and there were no deaths. VDRL and four L.E. preparations were negative. Serum proteins and electrophoresis were normal. Chest X-ray showed no cardiac abnormality or evidence of pulmonary disease. The following day an electrocardiogram showed first degree atrio-ventricular block with a PR interval of 0.24 sec. Two days later it was within normal limits with a PR interval of 0.16 sec. and stayed normal during the rest of her hospitalization. Repeat sedimentation rate, antistreptolysin O titer and C reactive protein three days and one week later were again within normal limits. Her temperature was never higher than 99°. She was discharged with a diagnosis of suspected acute rheumatic fever and myocarditis and was placed on 4 grams of aspirin daily.

Two weeks later she was seen in the medical clinic and had no specific complaint. One month later, however, she again had an upper respiratory infection with a temperature of 101°, joint aches and mild epistaxis. This time the examination was not remarkable aside from acute naso pharyngitis, but the electrocardiogram once again showed a second degree heart block with Wenckebach phenomenon. Because of this, she was re-admitted with a probable diagnosis of recurrent rheumatic myocarditis. On this admission all the laboratory studies and throat cultures done before were repeated and were unchanged. The following day the electrocardiogram was within normal limits. One week later she was discharged and seen at monthly intervals for the following three months. Aspirin was continued in spite of her asymptomatic state.

The patient did not return to the clinic for approximately one year. On July 7, 1963 she came to the emergency room complaining of pain across the right anterior chest wall which was slightly worse with inspiration. She had had an upper respiratory infection for about one week and had been given aspirin. Two weeks later she was seen in the cardiology clinic. On physical examination she had a very faint first heart sound and a grade 2, low pitched, mid-systolic heart murmur which was loudest in the 2nd and 3rd interspace along the left sternal border.

She was hospitalized for the third time for study and treatment. Again, the physical examination and all laboratory work were within normal limits except for the murmur, varying intensity of the first heart sound and occasional dropped beats. The initial electrocardiogram showed second degree atrioventricular block with Wenckebach phenomenon, but the subsequent three tracings were within normal limits.

In spite of these normal laboratory findings and only because of the electrocardiographic changes, it was thought that the patient probably had rheumatic myocarditis. She was placed on prednisone 20 mg. daily and penicillin. Prednisone was continued for one month and then tapered off in two weeks with no ill effects. She continued having transient atrio-ventricular block but was not subjectively aware of it.

In view of the fact that a diagnosis of organic heart disease, namely, rheumatic myocarditis, could not be made the following study was undertaken in order to confirm the suspicion that the arrhythmia was a functional one. After a resting electrocardiogram in the supine position, which showed second degree atrio-ventricular block with Wenckebach phenomenon, she was exercised, following which the second degree heart block disappeared and did not reoccur for twenty minutes (fig. 2). During this period, however, the electrocardiogram showed transient 1st degree heart block with a PR interval up to 0.32 seconds. Eyeball and right and left carotid sinus pressures induced second degree atrio-ventricular block with Wenckebach phenomenon (fig. 3), but breath holding in expiration and the Valsalva maneuver had no effect. Breath holding in inspiration produced only bradycardia with one blocked sinus beat. By changing her position from supine to sitting or standing, the heart block disappeared. In this position, breath holding, the Valsalva maneuver, eyeball and carotid sinus pressures did not produce the heart block. Forty minutes after a hypodermic injection of 1.2 mg. atropine the same maneuvers in the supine position failed to produce heart block. During this study, it was also noticed that whenever the patient talked she got second degree heart block which disappeared within one minute of silence. With atropine this effect was also abolished (fig. 4).

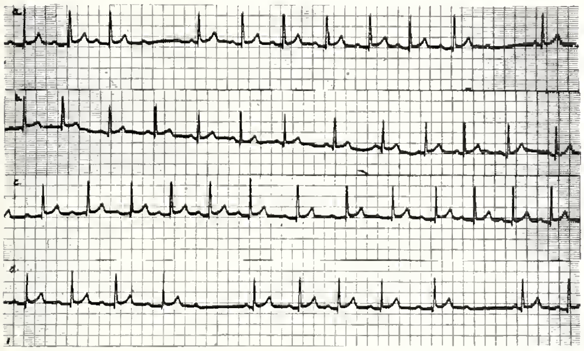

Fig. 2 (a) Electrocardiogram before exercise in supine position. (b) Immediately after exercise. (c) 15 minutes after exercise. (d) 20 minutes after exercise.

DISCUSSION

Although it has been shown that atropine may decrease the PR interval in patients with acute rheumatic carditis,^{15} with these tests and the clinical evolution, it became obvious that this young girl had functional, transient second degree heart block with Wenckebach phenomenon. Maneuvers that increased vagal activity induced the heart block. After atropine, these maneuvers were no longer effective. During each of her hospital admissions rheumatic myocarditis was properly suspected because of the joint symptoms, arrhythmia and heart murmur. The heart murmur presented an additional problem, but because of its character, mid-systolic timing and low intensity it was regarded as a functional murmur. Finally, the lack of supporting evidence for rheumatic myocarditis, led to appropriate tests and the proper diagnosis, but only after several hospitalizations and treatment.

The heart receives its innervation from sympathetic and parasympathetic nerves. The preganglionic sympathetic fibers originate from the first five thoracic roots. They synapse in the paravertebral and stellate ganglia, and post ganglionic fibers reach the heart via the cardiac nerves innervating the S-A and A-V node conduction system, the atrial and ventricular myocardium and the coronary arteries. The cardio-accelerator effect is mediated by norepinephrine which is released in the myocardium. Its effect on the AV node is to increase its rhythmicity producing also an increase in the speed of conduction from the atria to the ventricle, shortening systole, and causing the strength of myocardial contractions to increase.

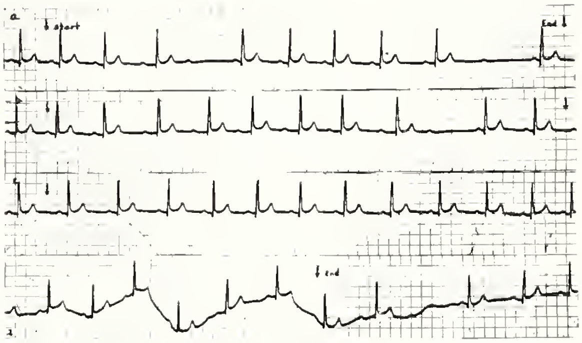

Fig. 3 (a) Electrocardiogram in supine position during eyeball pressure. (b & c) During right and left carotid sinus pressure.

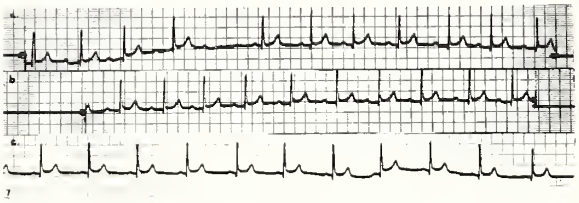

Fig. 4 Electrocardiogram in supine position during conversation with patient. (b) One minute later. (c) During conversation after atropine.

The parasympathetic stimulation begins in the medulla and reaches the heart via the vagus nerves ending in synapses with postganglionic fibers located within the myocardial ganglia. These postganglionic fibers innervate the same structures as the sympathetic nerves with the probable exception of the ventricular muscle. The cardio-inhibitory impulses are mediated by acetylcholine which is released at the nerve endings. The effect on the S-A and A-V nodes is to produce varying degrees of partial or complete heart block by slowing the conduction or by increasing the length of the refractory period. This effect can be enhanced by increasing vagal tone through carotid sinus massage, Valsalva maneuver or eyeball pressure. The vagal effect may be abolished by atropine.[9]

The Wenckebach type of second degree heart block is characterized by a progressive lengthening of the atrio-ventricular conduction time to a completely blocked auricular beat. It is due to the prolongation of both the absolute and relative refractory periods of the atrio-ventricular node.[8] In patients where this conduction disturbance is latent it can be brought out by carotid sinus stimulation, eyeball pressure or Valsalva maneuver. Its occurrence in normal individuals is very rare and when present is attributed to increased vagal activity. In 1944, Graybiel and his group[2] studied the electrocardiographic changes in 1,000 young, healthy aviators and ten years later[3] follow-up studies were reported on the same group. None of these individuals had a second degree heart block. In a similar study in Canada, first 5,000 then 17,000 electrocardiograms taken on young applicants for the Royal Canadian Air Force aircrew training were reviewed by Manning.[4, 5] One case of 2:1 second degree heart block was reported. It was thought that the applicant had organic heart disease and he was not accepted for training. In 1960, Johnson, Averill and Lamb[6] reported one case of second degree heart block with Wenckebach phenomenon in 67,375 asymptomatic, healthy individuals at Brooks Air Force Base, Texas. He was a 23-year-old pilot who during physical stress had occasional episodes of light headedness which were relieved by sitting down and resting. Eight months later, atrioventricular block was no longer present and could not be induced. It was presumed that myocarditis of unknown etiology had produced transient second degree heart block. Two subjects in whom second degree atrio-ventricular block with Wenckebach phenomenon was induced only by respiratory maneuvers were also reported. In a third subject intermittent second degree heart block with Wenckebach phenomenon was observed only in a resting tracing taken prior to an exercise test. It was reduced to first degree atrio-ventricular block after exercise. Two years later, when Hiss and Lamb[7] reported the electrocardiographic findings in 122,043 individuals from the same place (by adding 54,668 to the previously reported 67,375 asymptomatic subjects), a total of four cases of second degree heart block with Wenckebach phenomenon were found, the incidence being 0.03 per 1,000.

The first well studied case with second degree heart block with Wenckebach phenomenon due to increased vagus activity was reported in 1939 by Levy.[10] This was a 14-year-old school boy with episodes of fainting spells. The electrocardiogram showed second degree heart block with Wenckebach phenomenon which disappeared with exercise. Breath holding in inspiration, pressure on the carotid sinus and digitalis produced the block which was then completely abolished by atropine (table 1). The author concluded that the "fainting spells were most likely due to a more advanced heart block, produced by an accentuation, through fear, of his already existent second degree heart block." Laubry and his group,[11] Donner and Murlen,[12] Holmes and Weil,[13] Germain and Marty[14] and Grossman[15] each reported a case of transient second degree heart block with Wenckebach phenomenon without organic heart disease and studied the effects of the position, breath holding in expiration and inspiration, carotid sinus and eyeball pressure, and atropine (table 1). Finally, Benedict and Evans[16] reported a young Negro male with anxiety hysteria in whom second degree heart block with Wenckebach phenomenon was present only during these attacks.

Individuals with first and second degree heart block are generally asymptomatic and are discovered accidentally by routine physical and electrocardiographic examination. Occasionally, however, patients with such conditions may seek medical advice because of precordial pain, discomfort or palpitation.[8, 17] Our patient was never aware of the irregularity of her heart, but when she sought medical care for what we now believe to have been upper respiratory infections, the second degree heart block was suspected on physical examination and confirmed by the electrocardiogram. No other evidence of organic heart disease was found by careful physical and laboratory examination. Production of the heart block on several occasions by carotid sinus and eyeball pressure and even by simple questioning and the failure to reproduce this after atropine injection indicates the role of the vagal

TABLE 1

REPORTED CASES OF SECOND DEGREE HEART BLOCK WITH NORMAL HEARTS

Authors	*Age* *Sex* *Race*	*Degree of Block*	*Sitting or Standing*	*Exercise*	*Breath Holding*	*Carotid Sinus Pressure (C.S.)* *R.C.S.—right* *L.C.S.—left*	*Eye Ball Pressure*	*Atropine Sulfate 1.2 mg. I.M.*
Levy[10]	14 male white	1st & 2nd° block with W.P.*		W.P. disappeared	Inspiration produced 2nd° block with W.P.	R.C.S. 2nd° block with W.P. L.C.S. no effect		W.P. disappeared
Laubry et al.[11]	11 male white	1st & 2nd° block with transient W.P.	PR 0.14 W.P. disappeared	W.P. disappeared	Forced expiration: 2nd° block with W.P.	Accentuated W.P.	Accentuated W.P.	W.P. disappeared
Donner and Merlen[12]	20 male white	1st & 2nd° block with transient W.P.	Intermittent W.P.	W.P. disappeared			Accentuated W.P.	W.P. disappeared
Holmes and Weill[13]	22 male white	1st & 2nd° block with W.P.	PR 0.20, 2nd° block and W.P. disappeared	Mild, no effect. Vigorous, W.P. disappeared		No effect	No effect	W.P. disappeared
Germain and Marty[14]	18 male white	Dropped beats with ventricular escape					Slowed rate to 45. P waves disappeared. Normal QRS	
Benedict and Evans[16]	27 male Negro	Transient 1st & 2nd° block with W.P.	PR 0.16 Rate increased to 110		No 2nd° block. Rate decreased by inspiration	Left C.S. Rate from 72 to 61 PR from 0.24 to 0.27		No conclusion due to side effect†
Grossman[15]	22 male white	Transient 1st & 2nd° block with W.P.		2nd° block and W.P. disappeared. 1st° heart block		2nd° block with W.P.		1st° block
Aykent and Thurmann	16 female Negro	Transient 1st & 2nd° block with W.P.	PR 0.20 2nd° block and W.P. disappeared	2nd° block and W.P. disappeared	Inspiration dropped beat. Expiration no effect‡	Both L. and R. Carotid sinus pressure produced 2nd° block with W.P.	2nd° block with W.P.	W.P. disappeared

* W.P.=Wenckebach Phenomenon

† Atropine is given intravenously

‡ 2nd° heart block with W.P. was produced on talking (see text).

activity in the production of this transient first and second degree heart block with Wenckebach phenomenon. The heart block disappeared in the sitting or standing position and by exercise as reported in other cases in the literature.

SUMMARY

1. A 15-year-old Negro girl with transient first and second degree heart block with Wenckebach phenomenon without organic heart disease is reported.

2. The literature is reviewed, and the importance of a few simple maneuvers which enhance and abolish parasympathetic activity of the atrioventricular node is re-emphasized as a cause of heart block of obscure etiology.

Acknowledgment: The authors wish to express appreciation to Doctor James G. Janney, Jr., and Doctor Thomas F. Frawley for their help in the preparation of this paper.

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Smoking Habits in Missouri (cont'd.)

are hospitalized more frequently than non-smokers, and have far higher death rates than non-smokers. Among cigarette smokers, the frequency of physical complaints, the frequency of hospitalization and the death rate increase with amount of cigarette smoking, increase with degree of inhalation of the smoke and are higher among cigarette smokers who started to smoke early in life than among those who started to smoke late in life.

As in past studies, death rates from lung cancer, cancer of certain other sites, emphysema and coronary artery disease were found to be higher in cigarette smokers than in non-smokers.

There is no need for us to review the literature and discuss other evidence on the subject of smoking and health since this has been done many times before. We conclude that cigarette smoking constitutes a major health hazard in Missouri as well as in other parts of the world.

Acknowledgements: We would like to thank the 29,403 men who volunteered as subjects for this study; the volunteer workers of the Missouri Division of the American Cancer Society who enrolled and traced the subjects; the Missouri Department of Health that provided us with copies of death certificates; and the many physicians who provided us with additional medical information on subjects who died of cancer.

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Immunologic Tolerance: Basic Considerations and Clinical Applications

THE TERM IMMUNOLOGIC TOLERANCE refers to an animal's ability to encounter an antigenic material without initiating antibody synthesis in response to the antigen. Hence, the induction of tolerance results in the elimination of the animal's ability to produce a *specific* gamma globulin. The use of the adjective "foreign" in description of the antigen has purposely been avoided, as there seems to be no basis for differentiating the artificially induced abrogation of specific immune responses (immunologic tolerance) from the naturally occurring inability to produce antibodies to one's own antigens (autotolerance). The terms "immunologic unresponsiveness," "acquired tolerance," and "immunologic paralysis" all refer to this general phenomenon and may, in fact, have a common basis.

The history of immunologic tolerance demonstrates a pattern of discovery, rediscovery, explanation and expansion often repeated in biological sciences. The first recorded observation of immunologic tolerance was made in 1911 by Wells and Osborne.[1] These investigators were attempting to sensitize guinea pigs to the corn protein, zein, for anaphylactic studies and noted that animals on a corn meal diet were refractory to sensitization. Apparently the zein in the diet had passed through the intestinal wall and paralyzed their immunologic response to that antigen.

The modern era of tolerance studies began with Felton's report in 1942[2] that excessive doses of the capsular polysaccharide of pneumococci would render mice incapable of producing antibodies to the specific carbohydrate employed in the vaccine. These controlled experiments were performed to investigate an observation made by Felton a few years earlier.[3] He had noted in humans receiving prophylactic pneumococcal vaccine that 5.5% of the recipients had no antibody response to type I specific soluble substance. However, antibody production to other antigens was normal, suggesting immunologic paralysis of a specific immune response.

In 1945, Owen[4] noted a lack of antibody-producing ability in dizygotic cattle twins. This inability was implied by the occurrence in each animal's circulation of erythrocytes of the twin, and was found to be due to anastomoses of the placental circulation between the two animals, with subsequent "colonization" of the recipient's bone marrow with stem cells of the donor. Had this not occurred *in utero*, the recipient would have recognized these donor cells as foreign and rejected them via antibody production. This was the first report of prenatal induction of tolerance and acted as the trigger, together with Felton's paralysis experiments, for the current extensive investigation of the tolerance phenomenon.

Burnet and Fenner's postulation of a "self-marker" concept in antibody formation[5] was an extremely provocative hypothesis arrived at through examination of the above and other reports on the absence of normally-occurring immune responses. The testing of this hypothesis led Medawar and colleagues to their now classic studies in the establishment of homograft tolerance in mice via prenatal injection of donor tissues.[1] This work was first published in 1953. By 1956 the field had so grown in scope that "Acquired Tolerance" was the subject of a symposium at the Royal Society. The accompanying

Immunologic tolerance is the term used to describe the condition wherein an animal has been so treated that it has lost a particular immune response and hence it will be unable to make antibodies to that specific antigen. The author reviews work which has been done and concludes that the problems of graft rejection may have their answers in this field. Dr. Hyde is assistant professor, Departments of Microbiology and Pharmacology, School of Medicine, University of Missouri.

table contains a brief chronological summary of some of the major developments in the field of tolerance.

MAJOR DEVELOPMENTS IN THE FIELD OF IMMUNOLOGIC TOLERANCE

Date	*Investigator(s)*	*Contribution*	*Reference*
1901	Ehrlich & Morgenroth	Hypothesis = *Horror Autotoxicus*	7
1911	Wells & Osborne	Tolerance to dietary protein	1
1929	Sulzberger	Tolerance via abnormal route of injection	8
1936	Traub	Tolerance to virus following *in utero* infection	9
1942	Felton & Ottinger	Tolerance to carbohydrate antigen	2
1945	Owen	RBC chimera in dizygotic twins leading to tolerance	4
1946	Chase	Tolerance to chemical via alimentary tract	10
1949	Burnet & Fenner	Hypothesis = self marker for auto-antigens	5
1953	Billingham, Brent & Medawar	Homograft tolerance via *in utero* exposure	6
1954	Hanan & Oyama	Tolerance to protein via neonatal injection	11
1955	Main & Prehn	Radiation induced tolerance	12
1958	Schwartz, Stack & Dameshek	6-MP induced tolerance	13

Before discussing the mechanism of immune tolerance in any detail, let us briefly consider some aspects of the mechanism of antibody formation. Acquired immunities are developed via a common pathway, but differ in the elements responsible for their activity. Basically, there are three operational levels of immune reactivity: (1) classical circulating antibodies, (2) reagins of atopic allergies, and (3) specifically reactive mononuclear cells, probably lymphocytes. All of these demonstrate the high degree of specificity characteristic of immune responses. They differ mainly in the nature of the material responsible for reactivity and in the tissue of the body responsible for their production. Classical circulating antibodies are produced by plasma cells located in lymphoid tissues throughout the body, especially in the spleen and lymph nodes. In all probability atopic antibodies are also produced in lymphoid accumulations, although certain unique characteristics suggest that their site, and perhaps cell, of origin may not be the same as the other immunoglobulins found in serum. They may be produced by cells located in close proximity to the lining of the nasal and respiratory passages. This hypothesis correlates well with the observed prerequisite natural route of exposure for initiation of allergic symptomology in individuals so predisposed genetically.

The thymus gland has been implicated in recent years as the site of origin of sensitized lymphocytes. This is based upon the histologic appearance of the thymus, the lymphocytopenia that results from perinatal thymectomy of experimental animals, and the lymphocytosis that follows injections of a soluble extract of thymus (a thymic hormone?). It has been hypothesized that the thymus may be the primordium for all immunologic reactivity. In support of this hypothesis is the demonstration that thymectomy at birth will, in addition to depressing the lymphocyte count of peripheral blood, markedly impair the immunologic competence of the adult animal. Also, in phylogenetic studies it has been noted that there is a definite correlation between the presence of a thymus gland and the ability of the animal to develop acquired immunities. In addition, the tumors of the thymus gland that seem to accompany some immunopathies, e.g. certain suspected autoimmune diseases and agammaglobulinemia, might be additional evidence suggestive of a central role of the thymus gland in immunologic development. This hypothesized role of the thymus as a primordial source of all immunologic reactivities and the maturation of these capacities can be outlined as follows:

A. Intrathymic development

$$\text{thymic stem cell} \xrightarrow{\text{thymic hormone}} \text{small lymphocyte} \rightarrow \text{cells are freed into circulation to ``seed'' lymphoid tissues}$$

B. Extrathymic development

$$\text{small lymphocyte} \xrightarrow{\text{antigen}} \text{plasma cell}$$

The thymus apparently plays the major portion of its role as seed source of immunologically competent cells during fetal development. Exposure to antigens at post-natal times greater than one day seem to have little effect upon the immune capacities of the host. This rate of immunologic maturation varies among animal species, some animals being mature at the time of birth, whereas others may not fully mature for a week or more post-partum. These temporal relationships have been established by investigators studying the artificially induced absence of ability to produce antibodies to particular antigens.

According to Burnet's clonal selection theory of antibody formation,[14] the small lymphocytes that are freed into the circulation are pre-adapted and immunologically competent to respond to specific antigens. Hence, for each antigen (or group of related antigens) there is an homologous lymphocyte. That cell will be "excited" only upon contact with the antigen to which its reactivity is directed, and *only that antigen* will be able to induce further maturation to a cell actively producing antibody (the plasma cell). Upon accepting this model, one could hypothesize that the basic failure of agammaglobulinemiac's immunologic system is in the last stage of maturation, namely the conversion from sensitized lymphocyte to gamma globulin-synthesizing plasma cell.

The failure to develop particular immune competencies (autotolerance and immune tolerance) would be due to an arrestment of maturation at an earlier stage of immunologic development. Burnet has suggested that the intrathymic small lymphocyte has, at sometime shortly after its evolution from the thymic stem cell, a hyperreactive response to its homologous antigen. Upon contact with its specific excitant this highly sensitive cell will either lyse or be inhibited from further development. In either event it is removed from the body's pool of immunologically reactive cells. Thus, Burnet has supplied a plausible hypothesis to explain the *horror autotoxicus* phenomenon (the avoidance of immunologic self destruction) observed by Ehrlich approximately three-quarters of a century ago.

In summary, Burnet's hypothesis of the mechanism of antibody formation states that during the development of lymphoid tissues a very large number of cells bearing different reactive capacities is generated by hyperactive random mutation or some equivalent process. These patterns of immunologic response become progressively stablized so that by the time of birth the animal possesses a large pool of potential reactivities. The lymphoid cells carrying antibody patterns that could react with "self" components are destroyed or rendered incapable of proliferation by contact with that autoantigen during embryonic life. By introduction of a foreign antigen at a sufficiently early phase of this development (at a time when it would be recognized as "self"), the recipient can be rendered incapable of responding to that antigen in adult life.

The utilization of our, as yet, incomplete understanding of this adoptive tolerance in the field of homotransplantation is obvious. As of this time the only routinely successful organ transplants have been made between identical twins. Short term "takes" have been obtained by the use of immunosuppressive drugs such as 6-mercaptopurine. However, the use of therapeutic measures of this type is dangerous as it renders the recipient susceptible to infectious diseases. Indeed many of the surgical "experiments" of this type have had an untimely termination due to overwhelming, usually fatal, infection.

Projecting into the future, one can foresee a time when organ and tissue transplantation in humans will be accomplished with minimal difficulty. The surgical barriers are down and the immunologic barriers are crumbling. There are two possible approaches available: (1) specific modification of the immune response of the adult recipient and (2) pretreatment of the infant at birth to enable him to accept foreign tissues at a later time. The steps involved in the first approach are well under way, and involve the identification and isolation of the antigen or antigens responsible for the rejection of the graft and mild alteration of the immunologic apparatus involved in the response to these antigens. A hypothesized model procedure might be as follows:

a. Collection and storage of compatible blood, perhaps the patient's own blood.
b. Irradiation or chemical treatment to destroy the individual's immunologic capacity, thus backing up immunologic development to a stage comparable to that seen in embryonic life.
c. Injection of the antigens involved in graft rejection, during the post-irradiation recovery phase, concomitant with supportive transfusions *and* perhaps prophylactic antibiotic and immunoglobulin therapy.

The prospective recipient would be supported for a period of time sufficient for repopulation of his lymphoid tissue, which would be devoid of cells capable of immunologic response to the organ to be transplanted. This pretreated recipient would then be ready for the surgical step in our procedure and should accept the donated tissue as self.

The second approach to successful homotransplantation in humans has certain inherent difficulties, but is feasible and is now accomplished with experimental animals. The procedure, as now performed, consists of prenatal or immediate postnatal injection of the prospective recipient with viable cells from the prospective donor or an antigenically identical animal. This establishes tolerance to the donor and the tissues of this animal will henceforth be recognized as "self" and will not evoke an immune response. One of the problems in this procedure is the source of tissues to be used for tolerance induction and transplantation in the human. It would probably be necessary to establish tissue banks in which frozen organs could be kept for extremely long periods of time. These organ sources would have to be matched with the antigens utilized for tolerance induction to be certain that the recipient was receiving a transplant compatible with his tolerant state.

A circumvention of some of these difficulties might be possible if the prospective organ donor were the mother. It is conceivable to effect placental leakage of appropriate antigens from the mother to the fetus, thus making it possible to establish tolerance in the offspring. This has been accomplished with some success in experimental animals merely by injection of low concentrations of hyaluronidase intravenously into pregnant females. A procedure of this type would overcome some of the esthetic problems of injection of the newborn, as well as eliminating the need for tissue storage facilities.

One of the difficulties in any grafting procedure which has not been discussed yet is the so-called "graft vs. host reaction." If immunologically competent cells are present in the transplanted tissue it is possible that these cells would reject the recipient. To overcome such difficulties it might be necessary to employ irradiation or some other immunosuppressive measure to eliminate any potential for antibody production in the donated tissue.

Another clinical area where tolerance may be applied is in the field of autoimmune diseases. In these diseases where the immunologic apparatus has escaped the normal homostatic control mechanisms, autotolerance has broken down. Hence, expansion of our knowledge in the area of the basic mechanism operative in the establishment of tolerance will perhaps enable us to understand the pathogenesis of the disease and hopefully will give us some basis for the direction to follow in the cure of these conditions. For example, it is possible to foresee the time when a cure for thyroiditis will be accomplished by reestablishing the autotolerant state to thyroglobulin that existed at birth.

The author hopes that this discussion of mechanisms of antibody formation and immunologic tolerance has been both informative and provocative. Obviously, the prognostications of methods of approach to pertinent clinical problems are mere speculation.

Summary

Immunologic tolerance is the term used to describe the condition wherein an animal has been so treated that it has lost a particular immune response and hence it will be unable to make antibodies to that specific antigen. This lack of immunologic reactivity can be induced in experimental animals by proper treatment regimens. The artificially produced absence of immune responses may be a key to unlocking the problems of graft rejection encountered today. The natural counterpart of this experimentally induced non-reactivity is termed auto-tolerance. It is this phenomenon which eliminates the problems that would be encountered if individuals normally made antibodies to their own antigens. Further understanding of auto-tolerance and the basic mechanisms of antibody formation itself will be of major value to the physician dealing with auto-immune diseases.

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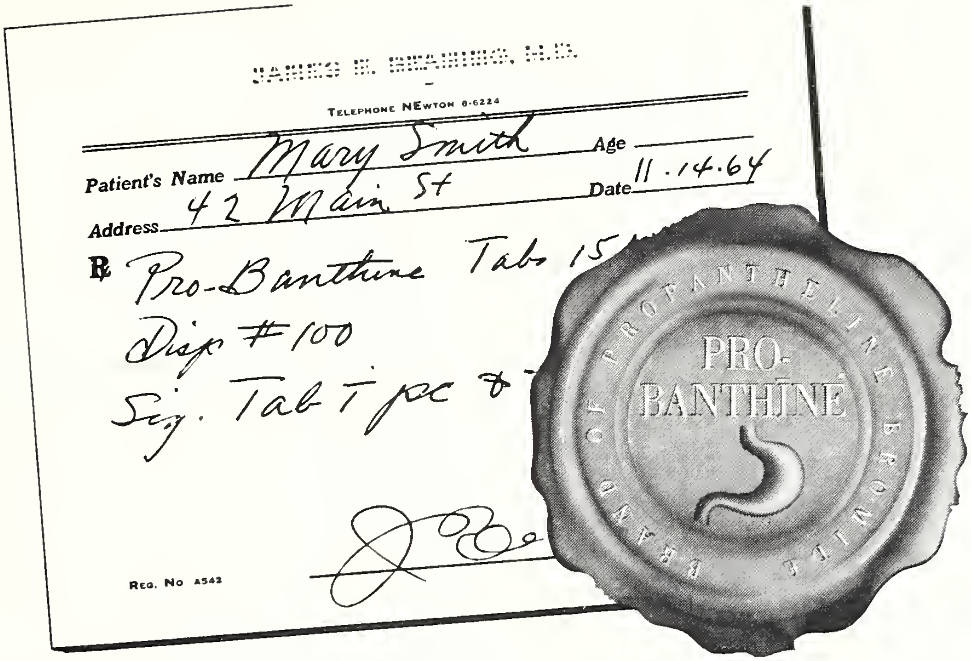

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Leonard T. Furlow, M.D.

President's Message

Those who are ever ready to charge the AMA with heavy-handed, "against everything" lobbying, might take note of the box score on the Association's activity during the 88th Congress.

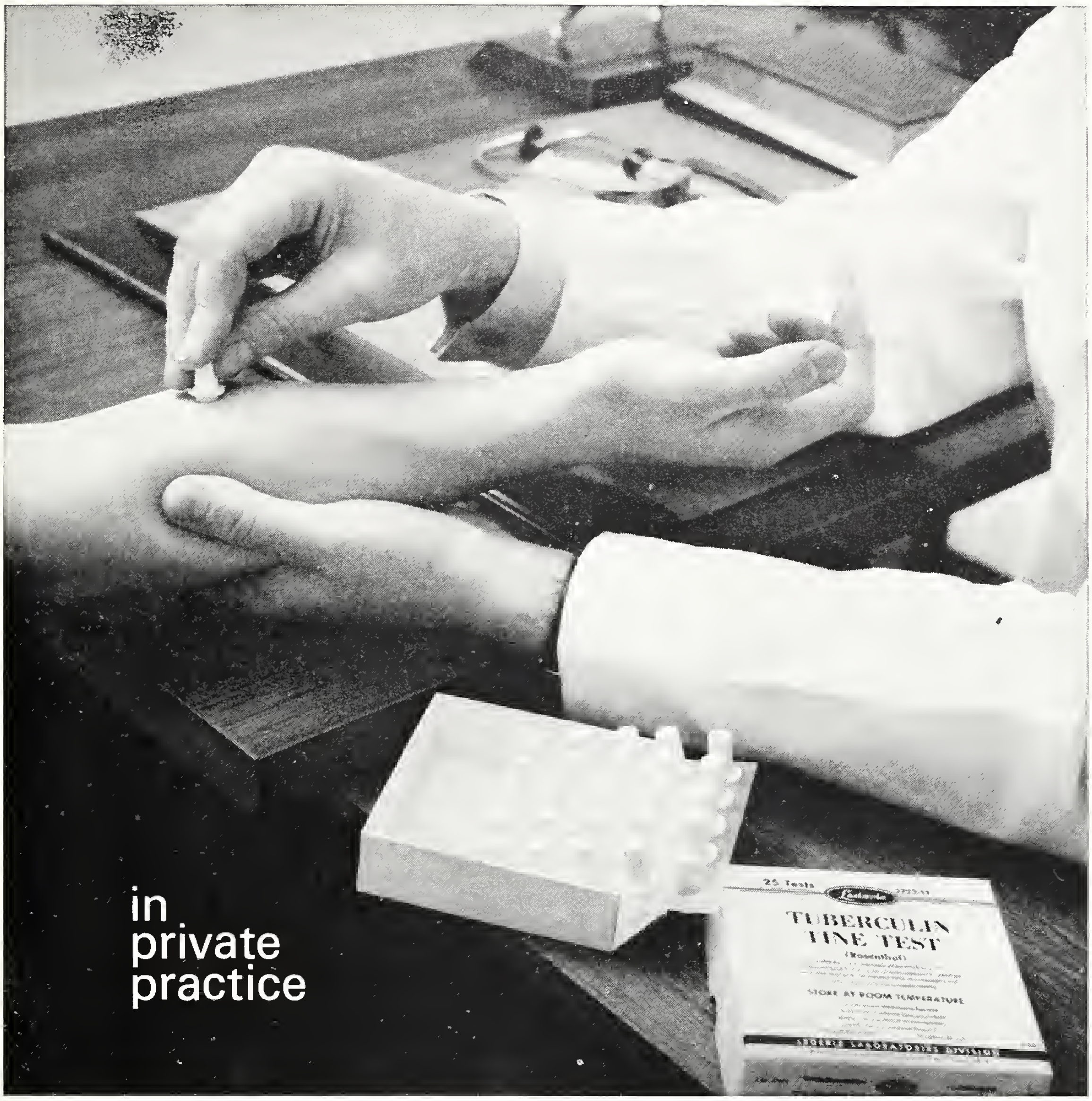
The AMA submitted 41 statements to Congressional committees during the past session. Eight of these were strictly informational in nature, and the remaining 33 pertained to 26 legislative proposals.

Of the 26 proposals, the medical profession supported 14, opposed nine and partially opposed three. Eight of the nine proposals which were opposed by the AMA were also opposed by the administration!

Major AMA legislative activity during the congressional session revolved around just four measures: H.R. 3920, the King-Anderson bill; H.R. 12, the Health Professions Educational Assistance Act; S. 1576, the Mental Retardation Facilities and Community Mental Health Centers Construction Act; and H.R. 10041, the Hill-Burton amendments. The Association supported the last three, and all of them were enacted into law.

But, the AMA opposed the King-Anderson bill, opposed it for logical and valid reasons; and thus, the organization becomes the target of attack by every liberal and welfare-stater extant. Isn't it ironic, that an organization which was founded for the purpose and dedicated to the principle of protecting the public and improving the standards of medical care should be so vilified because of its sincere and considered stand on one issue?

Leonard T. Furlow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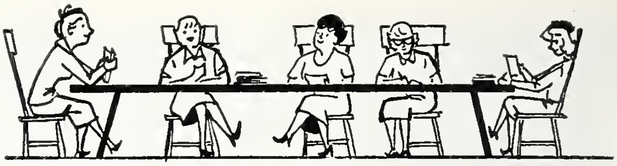
Woman's Auxiliary



As I write this, the old year of 1964 is about to end and I am greatly aware of my many blessings. Thanks so much for your lovely Christmas cards and notes. I did appreciate your thinking of me immensely. I hope you saw my sentimental verse in the *Quarterly Bulletin,* for it was intended for each one of you! Let's hope the New Year will bring much joy and peace, and less sadness and care to all.

Mrs. R. W. Bohnsack

I'm sure you are looking forward with anticipation to our state convention in St. Louis at the Chase Park-Plaza Hotel April 4-7. As I have said before, it will mark our 40th Anniversary; and I'm sure Venus Schattyn and Mil Diehr, co-chairmen, will, with all the help of the St. Louis County members, come up with something clever.

I hope you have your Point System sheets and reports completed by the time you read this. They should be in my hands by February 15. *Please* don't make me have to send you reminders! I just don't have time, although I love writing to and hearing from all of you. Since I'm carrying on two jobs now as both president and president-elect, I find my Auxiliary duties extremely demanding and not enough hours in each day to accomplish all the things I should. I entreat your cooperation!

You will be seeing a tentative program for the convention in the *Quarterly Bulletin* to come out in March, so watch for it.

I have been receiving copies of other State Auxiliary publications and it is most interesting to note what other groups are doing. Many of them have lots of pictures, and I wish you would take pictures of your groups and events and send them to our editor, Lenore Fitzgerald.

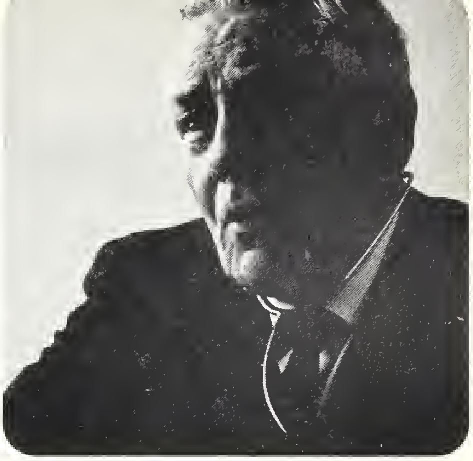
I am preparing to assist our local Pershing Memorial Hospital Auxiliary in conducting a Medical Self-Help Training Program, and know I shall find it most rewarding. I hope some of you are doing the same. You will find people most interested in this worthwhile project.

I hope you have your plans complete for your Doctor's Day celebrations. Don't forget, they are the most important people in our lives. Let's be sure to show them our appreciation. March 30 is the day!

Dr. Leonard T. Furlow, State President of the Medical Association, and Ray McIntyre, Field Secretary, were welcome guests at our beautiful Grand River Christmas dinner with our husbands at the Hotel Strand in Chillicothe. He urged us all not to forget to re-double our efforts to defeat the impending "medicare" legislation. I know you're all aware of it—just don't forget to do something about it—like write a letter *now*! That's a splendid New Year's Resolution! Let's all make this year a wonderful one for everybody! HAPPY NEW YEAR!

g better, Mrs. Smith?

My, yes! I'm not tired out anymore.



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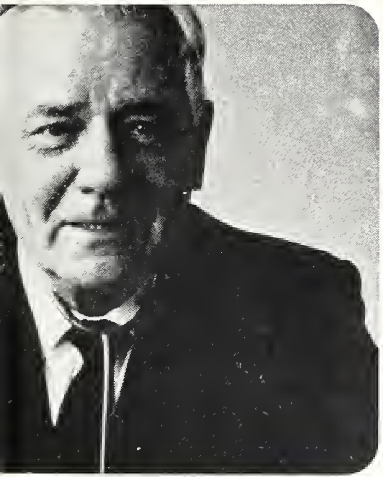

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Thanks for everything, Doctor.
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r; take particular care in cirrhosis or
severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use with caution in patients with ulcerative colitis, gallstones, or bronchial asthma.

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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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EDITORIALS

THE HAZARDS OF BIRTH

The most dangerous journey that any of us will be likely to undertake is our first journey, the one that delivered us from the relative comfort and safety of the uterus into the outside world. The danger of dying is greater during that period than at any other time of life except advanced old age. In many ways more tragic, is the fact that the causes of death in this period surrounding birth, if present in sublethal degrees, result in permanent physical and mental handicap throughout life.

In the United States there are 550,000 cerebral palsy patients, 5,000,000 persons suffering from mental retardation and an estimated 1,500,000 epileptics. Many of these problems are due to perinatal factors. It is admitted that many of them, perhaps even a majority, are due to circumstances such as heredity which in no way can be influenced by the attendant at birth. It is my purpose, however, to call attention to at least one factor which is controllable in the birth room and which, if controlled, might diminish this toll in human suffering.

It is well known that at least 90 per cent of births occur spontaneously, whether attended or not attended. It is not news, nor is it of significance, that the vast majority of mothers will deliver uneventfully whether attended by doctor, policeman, midwife, nurse, or even unattended. We realize that the cases in which great skill and judgment are required to extricate the little passenger because of an abnormality are in the minority; but the critical first minute of life, during which a dormant respiratory system must function immediately, is a constant accompaniment of birth.

It is a fundamental biological principle that every living cell must be constantly bathed in a suitable fluid. When that fluid contains insufficient amounts of oxygen, irreparable damage may occur to vital organs. Cerebral hemorrhage associated with birth trauma may result in cerebral palsy of the spastic type, but hypoxia is a much more subtle cause of damage. A properly functioning respiratory center is vital to neonatal respiration. This center may be depressed by three causes: (1) cerebral edema or hemorrhage, (2) intrauterine hypoxia and (3) anesthetic and analgesic agents administered to the mother. What must be realized is that, independent of the original cause of the depressed respiratory center, the longer it goes without sufficient oxygen the more depressed it becomes.

The newborn infant must, therefore, meet a timetable in order to be a normal individual. The first primitive gasp should occur within 30 seconds, and respiration should be established within one minute. Any infant who does not breathe regularly within two minutes must be *made* to do so by intratracheal intubation, if the tiny human is to remain normal.

We see, therefore, that the most important single skill that an attendant at birth must have is the ability to use the tracheal catheter promptly and skillfully. In order to obtain and maintain this skill, it is necessary to practice the art of resuscitation on every stillborn infant delivered. This skill should be practiced by every nurse, member of the house staff and physician who undertakes the care of the newborn.

"When did the baby breathe?" is a much more important question than the traditional, "How big is the baby?" The obstetrical forceps should be replaced by the laryngoscope and the tracheal catheter as symbols of the birth room.

Who delivered the baby, usually is of no great importance; but, who resuscitated the baby, may make a lifetime of difference.

THOMAS M. MIER, M.D.
St. Louis

MORE SMOKE

In this issue of Missouri Medicine, readers will find an interesting study on smoking habits and disease in Missouri. Studies of this type usually provoke vigorous expressions of agreement and disagreement. Meanwhile, as in all scientific investigation, the search goes on for methods of eliminating bias and establishing the validity of conclusions.

The American Medical Association is in the process of evaluating the possible relationship between smoking and health. We can anticipate that this will be an intensive investigation of wide scope and that the conclusions undoubtedly will carry great weight scientifically.

The Editor feels, however, that in addition to conducting its own investigation, the A.M.A. necessarily will review all other serious efforts at study of the question including papers such as the one we publish in this issue. Accordingly, we present the views of these Missouri authors.

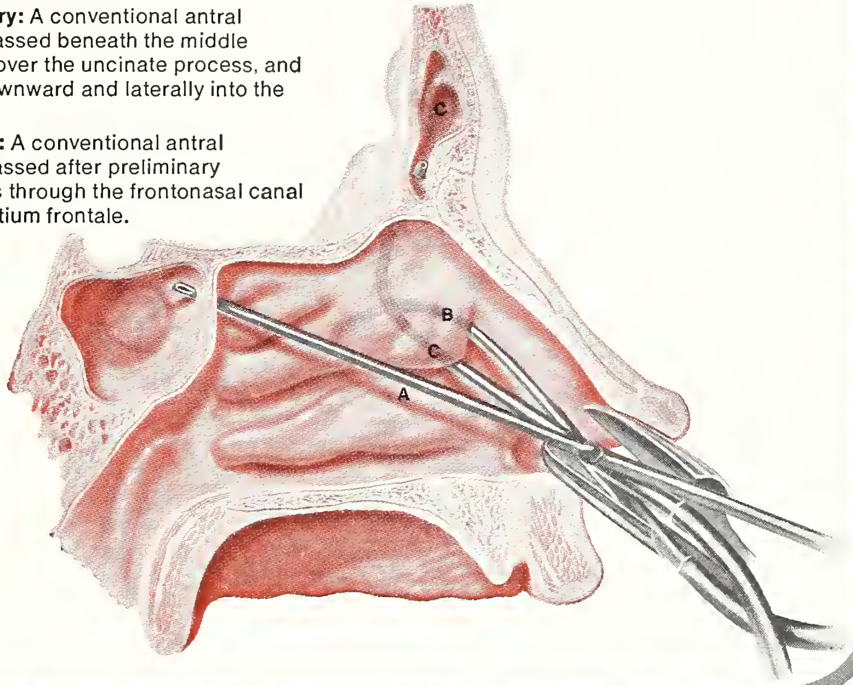
J.V.F.

A rhinologic approach to the sinuses
Sagittal anatomical section of nasal cavity showing approach for probing or irrigation by cannulas.

A—Sphenoid: A sphenoid cannula (under 13.5 cm.) passed around the middle and superior turbinates to the anterior wall of the sinus through its ostium.

B—Maxillary: A conventional antral cannula passed beneath the middle turbinate, over the uncinate process, and rotated downward and laterally into the ostium.

C—Frontal: A conventional antral cannula passed after preliminary maneuvers through the frontonasal canal into the ostium frontale.



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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

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Editorials (cont'd)

INTROSPECTION

What can I say to a senior high school student who sincerely expresses the wish to study medicine? Shall I begin by telling of the years spent in trying to retain the constant flood of information, of the feeling of inadequacy at every turn, of the countless times when the abysmal lack of knowledge weighed like a heavy burden that seemed never to lighten?

No, now that 40 years have passed since I was presented with a parchment proclaiming me skilled in the art and science of medicine (when in truth, it only opened the way for continued learning), I would impart to this eager-eyed young scholar the *positive* things I have gleaned in my professional lifetime.

I would tell him that medicine as a career offered a dedication to his fellow-man that few other callings could; that it would bring moments of joy in winning even the smallest gain over his constant antagonists, ignorance, disease and fear. I would speak of the rewards of peace within one's self, of the growing stature he would attain in the eyes of grateful patients and of the sincere appreciation of colleagues for the teachings and offerings of scientific matter from his own search for truth. Yes, I would tell this young scholar that in medicine he could find the "good life" by being the kind of doctor he wanted to be and knowing that the world was a little better for his being.

MARK M. MARKS, M.D.
Kansas City

THE WOMAN IN AMERICA

(The following Guest Editorial appeared in the November, 1964 issue of the Bulletin of the Greene County Medical Society. It was written by the Editor, Wilfred E. Wooldridge, M.D., of Springfield.)

Shortly ago I received an issue of *Daedalus*, the Journal of the American Academy of Arts and Sciences, which issue was devoted to "The Woman in America," an intriguing theme.

Even more intriguing, however, were the essays included in the issue. They dealt either with woman on the defensive or, in the cases of the final two articles, woman as she should be. In the first category was "Equality Between the Sexes: An Immodest Proposal," written by a woman, and "Revolution Without Idealogy: The Changing Place of Women in America," written by a man. In the final category were the two concluding essays, "Jane Addams: An American Heroine" and "Nothing to Fear: Notes on the Life of Eleanor Roosevelt." These latter constituted a sort of immolation, as though it had become necessary to prove that women were capable of something after all.

After reading these essays, I found myself deep in thought; not about what I considered to be the place of women in American society but, instead, what the essay writers, presumably experts, thought of it. Throughout the volume there was a common poignant theme of woman seeking to justify herself as worthy of a place in human associations. Until we read these articles, we had naively imagined that the woman of this country was in pretty solid, unless she wanted to be a U. S. Marshal or to run the 10,000 meters. Doubtless even that could be arranged.

But oddly, and we think significantly, nowhere was the exceptional capacity of woman to bear and rear children mentioned except once or twice in hushed and shamed tones, as though these were the very things which had cursed women through the ages and had held them in such wretched servitude.

Lest these articles be interpreted as a national theme, we feel called upon to affirm that at least some women seem magnificently gifted with calm understanding, quiet patience and the benign spirit which enables them to administer the manifold duties which would completely befuddle the male. In so doing, they can impart love and a stability to a household that is completely beyond the comprehension of their husbands. With these gifts, the woman firmly occupies a place in the sun; one which she need never relinquish and one, we are convinced, which makes the truly feminine woman the quiet envy of her more predatory counterparts who were not fortunate enough to be endowed with her qualities.

To our mind, the real problems arise not when the woman of America feels frustrated because she cannot become a bank president, if she can't. Her and our troubles begin, instead, when she loses any desire to do what she can do best; to give guidance and direction to her children and solid support to a husband who, in most cases, is biologically and temperamentally better suited to earning the family's livelihood. Hers is by no means a meagre undertaking. The fact that viewing it in the same light as being banished to Siberia accounts for some of the problems of today's America.

Missouri Medicine *welcomes comments and contributions from its readers. Correspondence should be addressed to the Editor with the understanding that such correspondence may be rejected or published (in entirety or in part) at the discretion of the Editor. With the exception of scientific papers, correspondence usually cannot be acknowledged or returned.*

New Members

Salim Akyol, M.D., 5540 Delmar, St. Louis, has become a member of St. Louis Medical Society. Dr. Akyol is a native of Adana, Turkey, received his preliminary education at Konya, Turkey and his M.D. degree at the University of Istanbul in 1948. He specializes in internal medicine.

Clifford A. Birge, M.D., 1057 Francis, St. Louis, has become a member of St. Louis Medical Society. Dr. Birge is a native of St. Louis, received his preliminary education at Amherst University and his M.D. degree at Washington University in 1961. He specializes in internal medicine.

James M. Brown, M.D., 4906 Southwest Avenue, St. Louis, has become a member of St. Louis Medical Society. Dr. Brown is a native of Anderson, Indiana, received his preliminary education at Indiana University and his M.D. degree at St. Louis University in 1949. He specializes in industrial surgery.

Robert J. Corday, M.D., 1465 S. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Corday is a native of Cleveland, Ohio, received his preliminary education at Western Reserve and his M.D. degree at the University of Cincinnati in 1946. He specializes is psychiatry.

Carlo DeStefani, M.D., 615 New Ballas Road, St. Louis, has become a member of St. Louis Medical Society. Dr. DeStefani is a native of Woonsocket, Rhode Island, received his preliminary education at Rhode Island State Universtiy and his M.D. degree at St. Louis University in 1943. He specializes in anesthesiology.

Robert C. Egan, M.D., 7820 Carondelet, St. Louis, has become a member of St. Louis Medical Society. Dr. Egan is a native of Dunlap, Iowa, received his preliminary education at Creighton University and his M.D. degree at Creighton University in 1958. He specializes in surgery.

Richard H. Fallon, M.D., 3720 Washington Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Fallon is a native of Boston, Massachusetts, received his preliminary education at Boston College and his M.D. degree at Harvard University in 1956. He specializes in surgery.

Herbert H. Gass, M.D., 660 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Gass is a native of Raipur, India, received his preliminary education at Elmhurst College and his M.D. degree at Washington University in 1930. He specializes in dermatology.

John K. Griffith, M.D., Koch Hospital, has become a member of St. Louis Medical Society. Dr. Griffith is a native of Kansas City, Missouri, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1950. He specializes in pathology.

Junior J. Loesch, M.D., 600 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Loesch is a native of Harper County, Kansas, received his preliminary education at the University of Wichita and his M.D. degree at St. Louis University in 1961. He specializes in anesthesiology.

(Continued on page 136)

In Memoriam

Box, Earnest M., M.D., Springfield, a graduate of St. Louis College of Physicians and Surgeons, 1898; member of Greene County Medical Society; aged 87; died November 19, 1964.

Hill, Jesse N., M.D., Independence, a graduate of Kansas City Medical College, 1906; member of Jackson County Medical Society; aged 85; died December 9, 1964.

Cook, Jerome E., M.D., University City, a graduate of Washington University, 1905; member of St. Louis Medical Society; aged 80; died December 12, 1964.

Ziegler, Allen M., M.D., Holden, a graduate of the University of Pennsylvania, 1928; member of Jackson County Medical Society; aged 61; died December 16, 1964.

Benincasa, Anthony V., M.D., Normandy, a graduate of St. Louis University, 1938; member of St. Louis Medical Society; aged 50; died December 21, 1964.

New Members (cont'd.)

Vincent J. LoPiccolo, Jr., M.D., 150 N. Meramec Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. LoPiccolo is a native of St. Louis, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1959. He specializes in pediatrics.

John S. Meyer, M.D., 660 S. Euclid Ave., St. Louis, has become a member of St. Louis Mediical Society. Dr. Meyer is a native of St. Louis, received his preliminary education at Yale University and his M.D. degree at Washington University in 1956. He specalizes in pathology.

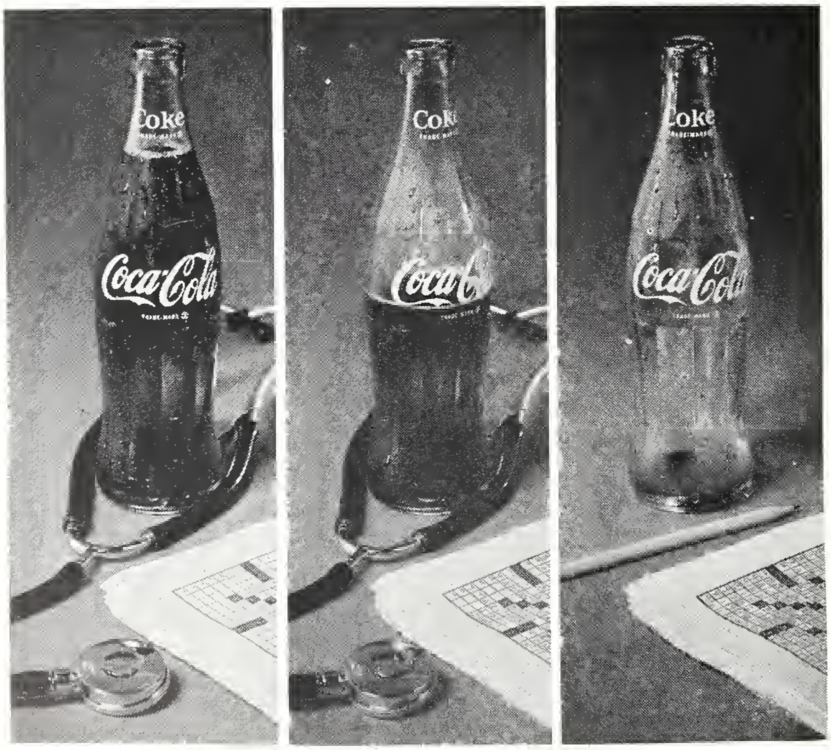
William W. Monafo, Jr., M.D., 600 S. Kingshighway Blvd., St. Louis, has become a member of the St. Louis Medical Society. Dr. Monafo is a native of Boston, Massachusetts, received his preliminary education at Harvard University and his M.D. degree at Tufts University in 1957. He specializes in surgery.

Theresa G. Reed, M.D., 1325 Hodiamont, St. Louis, has become a member of St. Louis Medical Society. Dr. Reed is a native of Baltimore, Maryland, received her preliminary education at Virginia State University and her M.D. degree at Meharry Medical College in 1949.

Herbert Silver, M.D., 216 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Silver is a native of Brooklyn, New York, received his preliminary education at Adelphi University and his M.D. degree at the University of Buffalo in 1957. He specializes in pathology.

Lewis J. Thomas, Jr., M.D., 600 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Thomas is a native of Philadelphia, Pennsylvania, received his preliminary education at Haverford College and his M.D. degree at Washington University in 1957. He specializes in anesthesiology.

Stanford Wessler, M.D., 216 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Wessler is a native of New York, New York, received his preliminary education at Harvard University and his M.D. degree at New York University in 1942. He specializes in internal medicine.



11:47 pm 11:53 pm 12:06 am

The meaningful pause. The energy it gives. The bright little lift. Coca-Cola with its never too sweet taste, refreshes best. Helps people meet the stress of the busy hours. This is why we say things go better with Coke

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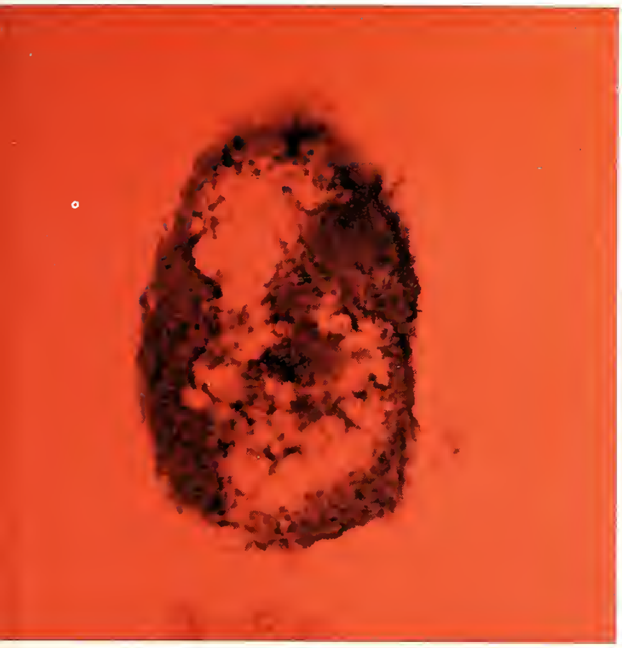
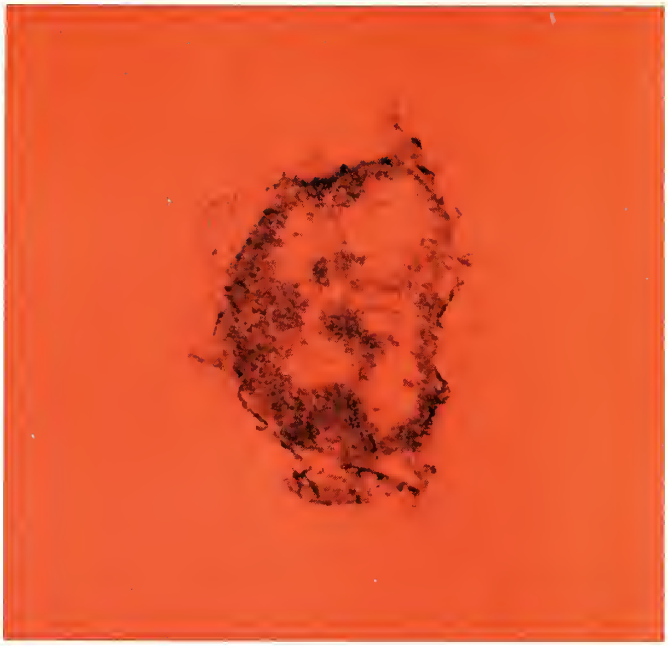
kills Haemophilus influenzae in respiratory infections



ctron micrograph of normal H. influenzae *organism.*



Electron micrograph of H. influenzae *after a 2-hour exposure to a therapeutic (8γ/ml.) dose of PENBRITIN (ampicillin).*

w broad-spectrum penicillin:

ost active antibiotic against *Haemophilus influ-*
ae[1-3]—a major pathogen in chronic bronchitis
l respiratory infections in children

emonstrated clinical efficacy and safety in chronic
nchitis[4-10]

ore effective than tetracycline in reducing spu-
n in chronic bronchitis[5]

ual Adult Dosage: 250 mg. every six hours. *Usual Dos-*
for Children—(under 13 years, whose weight will not
ult in a dosage higher than that recommended for
lts) 100 mg./Kg./day in divided doses every six or
ht hours for moderately severe infections; 200 mg./
./day in divided doses every six hours for severe
ections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci or other penicillinase-producing organisms.

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting, have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606—Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Millard, F. J. C., and Batten, J. C.: Brit. M. J. *i*:1159 (April 28) 1962. 2. Ivler, D., *et al.*: Abstracts, Third Interscience Conference on Antimicrobial Agents and Chemotherapy, October 1963, p. 32. 3. Stewart, G. T.: Pharmakotherapia *1*:197, 1963. (Progress in Drug Therapy). 4. Grant, I. W. B., *et al.*: Brit. M. J. *ii*:482 (Aug. 18) 1962. 5. Millard, F. J. C., and Batten, J. C.: Brit. M. J. *i*:644 (March 9) 1963. 6. Oswald, N. C.: Postgrad. Med. *35*:233 (March) 1964. 7. Howells, C. H. L., and Tyler, L. E.: Brit. J. Clin. Pract. *17*:321 (June) 1963. 8. May, J. R., and Delves, D. M.: Thorax *19*:298, 1964. 9. May, J. R., *et al.*: Lancet *ii*:444 (Aug. 29) 1964. 10. Pines, A.: Lancet *ii*:445 (Aug. 29) 1964.

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County Society News

FIRST DISTRICT

COUNCILOR,
JOSEPH L. FISHER, M.D., ST. JOSEPH

Grand River Medical Society

Sixty-five members, wives and guests of the Grand River Medical Society attended the Chrismas dinner meeting of the society at the Strand Hotel in Chillicothe, December 10. In spite of inclement weather this was an excellent turnout, and the entire occasion was one of seeking the spirit of Christmas. The ladies of the Auxiliary arranged appropriate Christmas decorations and unique attendance prizes. A good number of representatives of pharmaceutical companies were present. The special guest of the evening was Dr. Leonard T. Furlow of St. Louis, President of the MSMA. He gave a short address reviewing highlights of the recent AMA interim session in Miami. He also made a few remarks concerning the Missouri State Medical Foundation and its need for additional funds to carry on its assistance program for Missouri medical students.

Our society felt quite honored to have with us both Dr. Furlow and Mrs. Ralph Bohnsack of Brookfield, President of the Woman's Auxiliary to the State Medical Association. Mr. Ray McIntyre, Field Secretary to the MSMA was also a guest.

Jack L. Vinyard, M.D., *Secretary*

Honored guests at the Christmas meeting of the Grand River Medical Society included: (l. to r.) George Mandler, Chillicothe, incoming President; Mrs. Mandler, Auxiliary President; James H. Sweiger, Maysville, retiring President; Leonard T. Furlow, President MSMA; Mrs. Ralph W. Bohnsack, President State Auxiliary; and Donald M. Dowell, Chillicothe, Past President MSMA.

Buchanan County Medical Society

The December meeting of the Buchanan County Medical Society was held at the St. Joseph Convalescent Center on December 2. The Auxiliary met jointly with the Society. Dr. William B. Rost, President, presided at the dinner and program following. Eighty-five doctors and Auxiliary members attended.

The meeting also served as the annual meeting and installation of officers. Dr. Rost served as installing officer inducting the following officers: President, Herbert C. Senne; President-Elect, William Redmond; Vice-President, Irwin Rosenthal; Treasurer (serving his twelfth consecutive year), Robert W. Kieber; Secretary, Berwyn H. Moen; Member Board of Censors, Sharon E. Waggoner; MSMA Delegate, John N. Martin; alternate delegates, Thompson E. Potter and Richard V. Riddell; Member Committee on Public Policy, C. Tyson Carpenter; Board of Trustees to 1970, William B. O'Connor; Executive Secretary Committee, Dr. Rost.

The program was a discussion on Medicine and Religion by three local clergymen. Rabbi Myron M. Meyer discussed the role of the hospital chaplain; Monsignor Leo J. Ruggle spoke on catastrophic illness and how the physician and clergy could best work together to support the patient; Reverend Edward R. Sims talked on how the physician and clergy can work together for the patient in social illnesses.

Berwyn H. Moen, M.D., *Secretary*

SECOND DISTRICT

COUNCILOR,
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

A regular monthly dinner meeting of the Chariton-Macon-Monroe-Randolph County Medical Society was held at the Woodland Hospital in Moberly December 10. The featured speaker of the evening was W. R. Byrum, M.D., a Fellow in pathology at the University of Missouri Medical Center. His subject was "Genetics." His discussion of cell division in the body and the pairing of chromosomes was quite interesting and informative. He mentioned that cancer cells differ from normal cells in that they will frequently

Bacterial U.R.I.
Discomfort of U.R.I.

Bring the treatment together in a single prescription

ACHROCIDIN®

Tetracycline HCl-Antihistamine-Analgesic Compound

Each tablet contains:

ACHROMYCIN® Tetracycline HCl	125 mg.
Acetophenetidin (Phenacetin)	120 mg.
Caffeine	30 mg.
Salicylamide	150 mg.
Chlorothen Citrate	25 mg.

Effective in controlling tetracycline-sensitive bacterial infection and providing symptomatic relief in allergic diseases of the upper respiratory tract. Possible side effects are drowsiness (so one should not drive while on drug), slight gastric distress, overgrowth of nonsusceptible organisms. Tooth discoloration may occur if given during tooth formation (late pregnancy, the neonatal period, early childhood). Reduce dosage in impaired renal function. Increased intracranial pressure is a possible complication in infants. Average adult dosage: 2 tablets four times daily, given at least 1 hour before or 2 hours after meals.

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have different number of chromosomes rather than the normal 46.

Members present were: Drs. J. E. Campbell, Macon County; F. L. Harmes and G. C. Rice, Chariton County; F. A. Barnett, Monroe County; Josephine Baker, A. P. Rowlette, J. Will Fleming, Jr., Thomas S. Fleming, R. H. Young, W. D. Chute, C. C. Cohrs, L. E. Huber, Robert Hasson and C. C. Smith, Randolph County.

Dr. Leopold Lachance, Centralia, Miss Dorothy Kingsbury, biology teacher at the Junior College and Fred Eagan, biology teacher at the Junior High School, were guests.

J. Will Fleming, Jr., M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR,
PAUL H. ROTHER, M.D., ST. CHARLES

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society and the doctors' wives was held at the Golfview Inn at the St. Charles Golf Course, December 1. The evening began with a social hour, followed by dinner and then two separate programs. The doctors' wives met separately to complete organization of the Auxiliary to the Lincoln-St. Charles County Medical Society. The doctors were privileged to hear an excellent scientific presentation given by Bart Lissner, M.D., Plastic Surgeon of St. Louis on the subject, "The Treatment and Management of Burns."

This was one of the largest meetings of the Lincoln-St. Charles County Medical Society and possibly the ladies must be given some credit for this.

R. J. Fleming, M.D., *Secretary*

SIXTH DISTRICT

COUNCILOR,
ROLLA B. WRAY, M.D., NEVADA

Lafayette-Ray County Medical Society

The Lafayette-Ray County Medical Society voted to accept the MSMA resolution in regard to election of officers at the October meeting each year. Final approval was given at our October meeting. In that regard, the President-Elect for this year, Dr. Wayne Boydston, will become the President for 1965.

Other officers are: President-Elect, Dr. Charles

The soft drink without secrets
7up
7up
YOU LIKE IT IT LIKES YOU
7up
SEVEN-UP
YOU LIKE IT · IT LIKES YOU
CONTAINS CARBONATED WATER, SUGAR, CITRIC ACID; SODIUM CITRATE, FLAVOR DERIVED FROM LEMON AND LIME OILS.
"Fresh Up" WITH 7up
CONTENTS 7 FL. OZS.
This label tells all

It's a small matter of pride that 7-Up lists all its ingredients right on the label. Why hide a clear description of quality?

We think you'll appreciate knowing exactly what goes into this refreshing soft drink. How pure it is. How wholesome.

Each ingredient is as good as nature and science can make it. Important, too, is the exclusive way the ingredients are combined.

The inside story of 7-Up is on the outside. No secrets—no ambiguity. Our label tells you that here's a soft drink anyone can enjoy as often as he wishes.

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Cape Girardeau
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Cedar Rapids, Ia.
Shenandoah, Ia.

"Gesundheit!"

...is just for the sneeze

but for symptomatic relief of the common cold...

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TABLETS

Each layered tablet contains:

'Sudafed'® brand Pseudoephedrine Hydrochloride	20 mg.
'Perazil'® brand Chlorcyclizine Hydrochloride	15 mg.
Phenacetin	150 mg.
Aspirin	200 mg.
Caffeine	30 mg.

To relieve the aches, pains, fever and respiratory congestion of the common cold, flu or grippe with one product ...specify 'Emprazil'.

Caution: While pseudoephedrine is virtually without pressor effect in normotensive patients, it should be used with caution in hypertension. Also, while chlorcyclizine has a low incidence of antihistaminic drowsiness, the usual precautions should be observed.

Supplied: Bottles of 100 and 1000.

Also available with codeine—on prescription only—as **'EMPRAZIL-C'®** tablets

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BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

Riley; Secretary-Treasurer, Dr. W. C. LaHue. The state convention delegates are to remain the same as for the past year.

At the October 12 meeting, we were very fortunate to have as our speaker Dr. Donald Youll, who is a practicing allergist in Kansas City. He gave a very interesting and informative lecture on some of the common problems in allergy.

William C. LaHue, M.D., *Secretary*

West Central Missouri Medical Society

The December meeting of the West Central Missouri Medical Society was held at Glenn's Cafe in Butler, on Thursday evening, December 10. The total attendance, doctors, wives and guests, was 22. A social hour and dinner preceded the regular meeting of the Society. The scientific portion of the program was presented by Dr. Ned Rodes, a practicing surgeon in Mexico, Mo., whose subject was, "Breast Cancer—Facts, Fancies and Furors." This was a most instructive and interesting presentation.

Following the scientific program the business session of the society was held. The proposed amendment to the constitution was read. This amendment, having been presented at the previous meeting and mailed to all members before the December meeting, was voted upon and accepted. It changes the date of the annual election of officers of the Society from December to October.

Dr. R. B. Wray, chairman of the Nominating Committee, reported the following committee recommendations for officers of 1965: President, W. S. Love, Nevada; Vice-President, Robert Brownsberger, Appleton City; Secretary-Treasurer, Roy W. Pearse, Jr., Nevada. Delegates and alternates to MSMA: Bates County; Douglas C. Ronald, Butler, Delegate and Carter W. Luter, Butler, Alternate. Cass County; O. B. Barger, Harrisonville, Delegate and Alfred W. Eklund, Pleasant Hill, Alternate. Cedar County; Worley K. Stewart, Eldorado Springs, Delegate and Robert Magee, Eldorado Springs, Alternate. St. Clair County; Donald H. Geisler, Osceola, Delegate and Robert Brownsberger, Appleton City, Alternate. Vernon County; James J. Pascoe, Nevada, Delegate and William H. Allen, Nevada, Alternate. The above nominations were approved by acclamation.

It was announced that the January meeting will be held in Harrisonville.

Roy W. Pearse, Jr., M.D., *Secretary*

(Continued on page 144)

Hygroton®
brand of chlorthalidone
the long-acting diuretic

Indications
Many types of edema involving retention of salt and water.
Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
Precautions
Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
One tablet (100 mg.) daily with breakfast.
Availability
Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

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How does Hygroton® brand of chlorthalidone stack up against other diuretics?

Not very high. In terms of one week's therapy, that is. The usual dosage is just one tablet per day. Very often, the dosage is even lower. So a week's therapy doesn't amount to much.

That's why it's nice to work with Hygroton®, brand of chlorthalidone. You have fewer tablets to prescribe. Your patients have fewer tablets to take. And fewer to pay for.

For sheer diuretic effectiveness, choose Hygroton®, brand of chlorthalidone. It generally promotes more natruresis per tablet than the thiazides. We'll stack it up against any diuretic.

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County Society News (cont'd.)

TENTH DISTRICT

COUNCILOR,
W. D. ENGLISH, M.D., CARDWELL

Mineral Area County Medical Society

A joint dinner meeting of the members of the Mineral Area County Medical Society and the lawyers of that circuit was held at the St. Francois Country Club, Farmington, November 24. The evening festivities began with a social hour, followed by dinner and then the program. A talk on "The Coroner vs. the Medical Examiner: Which Is Best for Missouri" represented the special feature of the evening's program. This talk was given by Vincent Perna, M.D., pathologist of St. Louis, who is a former coroner for Boone County, Missouri. This subject was of considerable interest in as much as proposed legislation for a medical examiner's system in Missouri is under consideration. A good general discussion followed the formal presentation.

This occasion was a most pleasant one including an evening of sociability and the discussion of an item of interest to both lawyers and physicians.

C. W. Chastain, M.D., *Secretary*

Butler-Wayne-Ripley County Medical Society

The Tri-County Medical Society entertained members and their wives with cocktails and dinner, December 14, at Westwood Hills Country Club, Poplar Bluff, Missouri.

W. D. Robertson, M.D., *Secretary*

CLASSIFIED ADS

FOR SALE—General Practice established 18 years. . . . Above average clientele. Ideal for G.P. with surgical experience or General Surgeon. Progressive town of 9,000, 50 miles southwest of St. Louis. Accredited, open staff 125 bed hospital. Will introduce. Liberal terms. Contact Box 310, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

LOCATION WANTED: Oklahoma Graduate, age 31, married, military obligation fulfilled, general practice experience. Will complete general surgery residency June 1965. Desire group or partnership practice. Contact John E. Griffin, M.D., 2508 Mann Ave., Des Moines, Iowa 50310.

INTERNIST, to practice with other Board Certified Specialists under Board Certified Administrators. Salary $14-17,000. Contact Donald B. Peterson, M.D., Superintendent, Fulton State Hospital, Fulton, Missouri.

WANTED—Associate in General Practice in a two-man Modern Clinic Building. Town of about 7,000 in Missouri Ozarks. Modern hospital available. Contact Rollin H. Smith, M.D., West Plains, Missouri.

FOR SALE—Fertile farm. Approximately 500 acres. Modernistic house. 65 miles from Mid-town St. Louis. High income potential. Terms. A delightful place to live plus an income. Contact George Saum, Farms Broker, Villa Ridge, Missouri. Phone PIlgrim 2-4602.

ASSOCIATE NEEDED for a two man General Practice (Sears Foundation Building) in Southeast Missouri. Located 15 minutes from two accredited hospitals. Present associate is leaving for mission field. For particulars, write or call J. Marshall Jung, M.D., Box 368, Illmo, Missouri. Colony 4-2135.

GENERAL PRACTITIONERS, interested in psychiatry. Opportunity to develop knowledge of psychiatry under Board Certified Administrators and Staff Psychiatrists. Consideration given to all applicants. Salary $9-13,000 or more. Contact Donald B. Peterson, M.D., Superintendent, Fulton State Hospital, Fulton, Missouri.

WANTED—General Practitioner to associate in Group Practice. Modern office facilities and accredited hospital. Adequate guaranteed income to start and increases leading to full partnership. Contact Eugene B. Robichaux, M.D., Excelsior Springs, Mo.

PSYCHIATRIC RESIDENCIES—Beginning July, 1965, Missouri Institute of Psychiatry in St. Louis—State's largest medical center—three years accredited; In-Patient, Out-Patient, child and adolescent experience; training in psychotherapy, neurology, psychopharmacology and research. Stipends $4,900-$8,900. G.P. Stipends $10,000-$12,000. Five year career program $10,000-$15,000. University affiliation. Write for application: George A. Ulett, M.D., Chief, Education & Training, Missouri Institute of Psychiatry of the School of Medicine of the University of Missouri, 5400 Arsenal Street, St. Louis, Missouri.

in maintenance therapy...

a working analgesic for the active arthritic

ARTHRALGEN®

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.

a working analgesic for the active arthritic

—rapidly relieves early morning stiffness and arthritic pain. It promises a quicker response in most patients because its analgesic ingredients need no metabolic conversion before they act. As a combination of two prominent analgesic drugs, Arthralgen can often establish smoother, more complete pain relief because it synergistically produces more efficient analgesia on lower dosage levels of each.

two proven pain relievers

Arthralgen combines two better-tolerated, time-tested analgesics, acetaminophen and salicylamide, into a pharmacologically sound and therapeutically effective formulation. As Arthralgen, it penetrates tissues promptly and relieves pain rapidly with less likelihood of gastric irritation than aspirin.

sodium-free

Arthralgen contains no sodium. Therefore, it is often a safer and more suitable analgesic for use in the long-term treatments of arthritic patients who have other conditions which require sodium restriction.[1]

ARTHRALGEN®-PR (Arthralgen with prednisone)

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.
Prednisone	1 mg.

To help provide dosage flexibility in patients who require steroids, the basic Arthralgen formula is also available combined with prednisone as Arthralgen-PR. Prednisone is favored as the more advantageous steroid for use in Arthralgen-PR because it shows less tendency toward sodium retention, potassium excretion, and steroid-induced hypertension than that which often accompanies the use of cortisone and ACTH.[2]

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BRIEF SUMMARY

Arthralgen and Arthralgen-PR are indicated in the management of rheumatoid arthritis, acute gouty arthritis, rheumatoid spondylitis, osteoarthritis, bursitis, fibrositis, and neuritis. Arthralgen may be used for analgesia in colds, flu, and various myalgias.

DOSAGE: One or two tablets four times a day. After remission of symptoms dosage should be reduced to the minimum maintenance level.

SIDE EFFECTS: Nausea, GI upset, or mild salicylism may rarely occur. Symptoms of hypercorticoidism dictate reduction of dosage of Arthralgen-PR.

PRECAUTION: Reduction in dosage of Arthralgen-PR given over a long period should be gradual, never abrupt.

CONTRAINDICATIONS: Hypersensitivity to any ingredient.

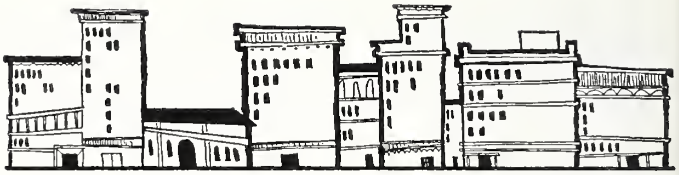
As with any drug containing prednisone, Arthralgen-PR is contraindicated, or should be administered only with care, to patients with peptic ulcer, tuberculosis, nephritis, diabetes mellitus, acute psychoses, Cushing's syndrome (or Cushing's disease), overwhelming spreading (systemic) infection, or predisposition to thrombophlebitis.

Arthralgen-PR is generally contraindicated in patients with uremia and viral infections, including poliomyelitis, vaccinia, ocular herpes simplex, and fungus infections of the eye. It is also contraindicated in patients with chicken pox or susceptible persons exposed to it.

SUPPLY: Arthralgen (white, scored) and Arthralgen-PR (yellow, scored) tablets are available in bottles of 100 and 500.

REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.

From the Medical Schools



WASHINGTON UNIVERSITY

Dr. Carl Cori has been named distinguished service professor of biological chemistry at Washington University School of Medicine. One of the world's leading biochemists, Dr. Cori was cited for his outstanding service to the School of Medicine, to the University and to medical science in general. He joined the Washington University faculty as professor of pharmacology in 1931, and became professor of biological chemistry and head of the department in 1947. Dr. Cori was awarded the Nobel Prize in 1947 jointly with his late wife, Dr. Gerty Cori, for work on the conversion in the body of glycogen into glucose. In the past few years Dr. Cori's interests have centered on research on the regulation of carbohydrate metabolism in muscle and liver and the effects of hormones such as insulin and epinephrine on this metabolic cycle.

A new 8-bed intensive care unit for patients with throat and neck disorders opened in December in McMillan Hospital. The unit will be used primarily for the patient who has undergone a laryngectomy, Dr. Theodore Walsh, professor and head of the department of otolaryngology, said.

The Allen P. and Josephine B. Green Foundation of Mexico, Missouri, has made a $100,000 gift to the School of Medicine for establishing and developing a division of pediatric neurology to be located in St. Louis Children's Hospital. The new division will be available for treatment of children with disorders of the brain and spinal cord and will be used for training both pediatricians and neurologists.

Certification from the AMA's Council on Medical Education has been granted to the School of Cytotechnology located in the Washington University Medical School and Associated Hospitals. The School trains technicians in methods of cancer detection. Dr. Lauren Ackerman, professor of surgical pathology at the School of Medicine, is director of the School. This certification gives the school the only approved course in cytotechnology in Missouri.

UNIVERSITY OF MISSOURI

Research at the University of Missouri Medical Center into the use of computers in the diagnosis of bone tumor has been assured two more years of support from the National Institutes of Health with the award of an NIH renewal grant of $26,887. The research is being conducted in the Department of Radiology under the direction of Dr. Gwilym S. Lodwick, professor of radiology and chairman of the department. It is directed toward developing a digital computer program for determining the probable type of a tumor from analyses of X-ray photographs (radiographs). It involves storing in a computer's "memory" coded data on the characteristic signs of a number of types of known tumors, the data being derived from radiographic or clinical findings. When coded material based on an analysis of X-rays of an unidentified type of tumor is fed into the computer, the computer compares the X-ray analysis material with the stored data. By the comparison the computer determines the probability that the unidentified tumor is one of the known tumors stored in the computer.

The M.U. Medical Center received a 25-year membership certificate from the American Hospital Association at the annual meeting of the Missouri Hospital Association. Mr. J. Barton Boyle, associate director of the Medical Center, accepted the award.

ST. LOUIS UNIVERSITY

A course for non-psychiatric physicians entitled "Medical Practice and Mental Health" will be presented by the Department of Neurology and Psychiatry beginning February 23. Course director will be Dr. Edward T. Auer, director, Department of Neurology and Psychiatry. The sessions, to be held six Tuesday mornings, February 23 through March 30 from 8 to 10 a.m., are designed for non-psychiatric physicians, internists, obstetricians, general practitioners and pediatricians. The course will assist each participant in adding to the understanding of the role of social and psychological factors in the etiology, diagnosis, and treatment of cases ordinarily met in the consultant room. Emphasis will be on the function and effect of emotional factors, rather than on the theory of psychiatry itself.

Two grants awards and a predoctoral fellowship in cancer research have been awarded the School of Medicine. Dr. Henry Pinkerton, professor of pathology, is working under a new grant for $104,100 from the U.S.P.H.S., awarded for the study of the relation of viruses to cancer.

Dr. Maurice Green, director of the Molecular Virology Institute, is using a grant for $8,150 received from the Milheim Foundation to test adenoviruses as causative agents of human cancer.

Sister Stanislaus Lacy is the recipient of a N.I.H. predoctoral fellowship. Her research is concerned with the genetic relatedness of the tumorigenic and nontumorigenic human adenovirus types.

A nuclear magnetic resonance spectrometer has been installed in laboratories at the Medical Center, under the direction of Dr. Paul E. Peterson, associate professor of chemistry. The equipment was purchased for $30,000 under institutional grants from the Schools of Dentistry and Medicine and with research funds from the Allied Chemical Corporation and anonymous sources. The instrument will be of value to researchers with chemical and biological interest in the position of hydrogen atoms in organic molecules.

Aventyl® HCl (nortriptyline hydrochloride, Lilly), a new effective antidepressant agent, has been introduced by Eli Lilly and Company for the treatment of mental depression, anxiety-tension states, and psychosomatic disorders, even including those not necessarily connected with depression. It is said to be useful as an adjunct to psychotherapy and to electroconvulsive therapy; and is not a monoamineoxidase inhibitor. The new agent has been studied exhaustively for over three years by 150 investigators.

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[1] Foret, J.: Antibiot. Ann. 1958-19

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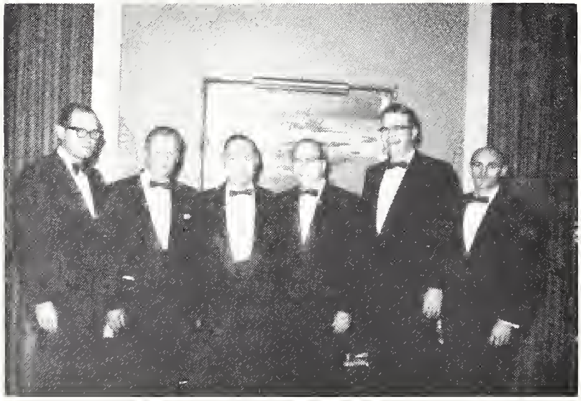
Missouri Academy of General Practice

More than 300 members of the St. Louis Academy of General Practice, wives, friends and special guests attended the 18th Annual Installation of Officers and Dinner Dance at the Missouri Athletic Club, December 5. This affair began with a social hour, followed by dinner and then a variety of entertainment. Special entertainment was furnished by a number of well known entertainers from "Gaslight Square." Following this, the business session was opened by Dr. Charles Nester, the out-going President. After his brief remarks, he presented the gavel to Dr. Barney Finkel, the incoming President. As his first official act, Dr. Finkel presented a plaque to Dr. Nester from the St. Louis Academy expressing appreciation of his services as President during 1964. Plans for 1965 were then outlined by Dr. Finkel who concluded by requesting full cooperation of the membership in carrying on the basic objectives of the Academy.



Officers of the St. Louis Academy of General Practice pose for formal portrait. (L. to r.) Charles B. Ladd, Vice President; Paul M. Parashak, President-Elect; Barney W. Finkel, new President; Charles A. Nester, retiring President; Ernest H. Schaper, Secretary; Leo L. Wacker, Treasurer.

Following the business session, a ten piece band played for dancing. It was interesting to note the large number of persons who participated in this event irrespective of age.

Newly installed President of the St. Louis GP Academy, Dr. Finkel, beams broadly while accepting gavel from his predecessor, Dr. Nester. The outgoing President had a sigh of relief rather than a smile.

A dinner meeting of the Northwest Missouri Chapter of the MAGP was held at the Moila Temple in St. Joseph, December 15. A social hour preceded dinner and the scientific program. More than 30 doctors from St. Joseph and surrounding area attended and enjoyed an interesting and informative discussion on, "Diabetes in Pregnancy," by William J. Cameron, M.D., Assistant Professor of Gynecology and Obstetrics, University of Kansas School of Medicine. A general discussion period followed Dr. Cameron's formal presentation. During the business session it was decided to look into the possibility of holding another one-day scientific symposium in St. Joseph sometime in August 1965, similar to the one so successfully held in August of 1963.

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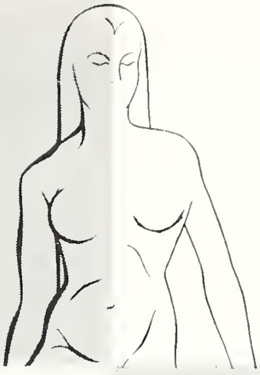

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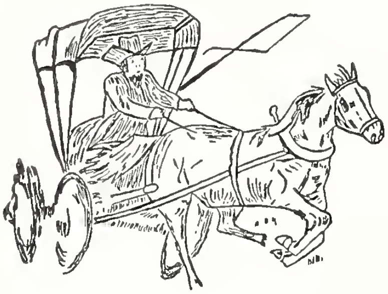

FORTY YEARS AGO

The American Urological Association, the largest organization of urologists in this country, will hold its annual meeting in St. Louis, May 21, 22, 23, 1925. Dr. John R. Caulk, of St. Louis, is chairman of the committee of arrangements. He will be assisted by Drs. Bransford Lewis, Wm. M. Robertson, C. E. Burford, H. McClure Young.—The Rockefeller Institute for Medical Research has announced the release of the drug known as tryparsamide for use in the treatment of human and animal trypanosomiasis (African sleeping sickness and mai de caderas) and selected cases of syphilis of the central nervous system.

A new medical journal has been launched by physicians in Springfield with the title "Springfield, Mo., Clinical Bulletin." It will be the means of bringing reports of the good work done in and around Springfield to the attention of the profession. Dr. Paul F. Cole is managing editor and is assisted by a staff of 18 associate editors.

The presidents of the following county medical societies have recently appointed temporary chairmen to organize a Woman's Auxiliary: Gentry County, Mrs. W. T. Martin, Albany; Boone County, Mrs. W. P. Dysart, Columbia; Montgomery County, Mrs. E. W. Tinsley, Montgomery City; Ste. Genevieve County, Mrs. J. C. Clapsaddle, Ste. Genevieve; Ralls County, Mrs. Mary Downing Wood, New London; Putnam County, Mrs. C. P. Vores, Unionville; Mercer County, Mrs. J. C. Donahue, Mercer.

The recent enlargement of the department of radiology of the St. Louis City Hospital should be a source of great satisfaction to physicians of that city and to the medical profession throughout the state.

TWENTY-FIVE YEARS AGO

Twenty-five deaths from tularemia were reported during the first 11 months of 1939. Fifty-eight cases were positively identified by the laboratory of the State Board of Health in November. Tularemia is usually contracted from dressing or eating diseased rabbits.

Dr. Quitman U. Newell, St. Louis, was chosen President-Elect of the Southern Medical Association at the meeting in Memphis.

"On invitation of President Franklin Delano Roosevelt, the committee appointed by the House of Delegates of the American Medical Association to confer with federal representatives relative to the proposed National Health Program visited the White House in Washington to discuss the plan for the construction of hospitals with federal funds, first suggested by the President December 21" *(Journal of the American Medical Association).*

The Boone County Medical Society held its annual dinner meeting and election of officers at the Stephens College Country Club. The following officers were elected: President, Dr. Frank E. Dexheimer; vice president, Dr. Karl D. Dietrich; secretary-treasurer, Dr. Maurice E. Cooper (reelected).

TEN YEARS AGO

Dr. Frederick Chapman Robbins, currently Professor of Pediatrics, Western Reserve University School of Medicine, was one of three physicians winning the 1954 Nobel Prize in Medicine. Doctor Robbins graduated from the University of Missouri with the degree of Bachelor of Arts in 1936, and obtained a Bachelor of Science in Medicine from the University of Missouri School of Medicine in 1938, subsequently receiving his Doctor of Medicine degree from Harvard in 1940.—The *Poplar Bluff Republic* on December 2 printed a nice article about Andrew F. Bugg, M.D., Ellington, giving a history of his 53 years as a country doctor.

The St. Louis Medical Society Orchestra presented its first public concert in December. B. G. Mannis, M.D. is chairman of the orchestra committee. Other members of the committee are Byron J. McGinnis, M.D., Mary E. Morris, M.D., and Walter J. Siebert, M.D.

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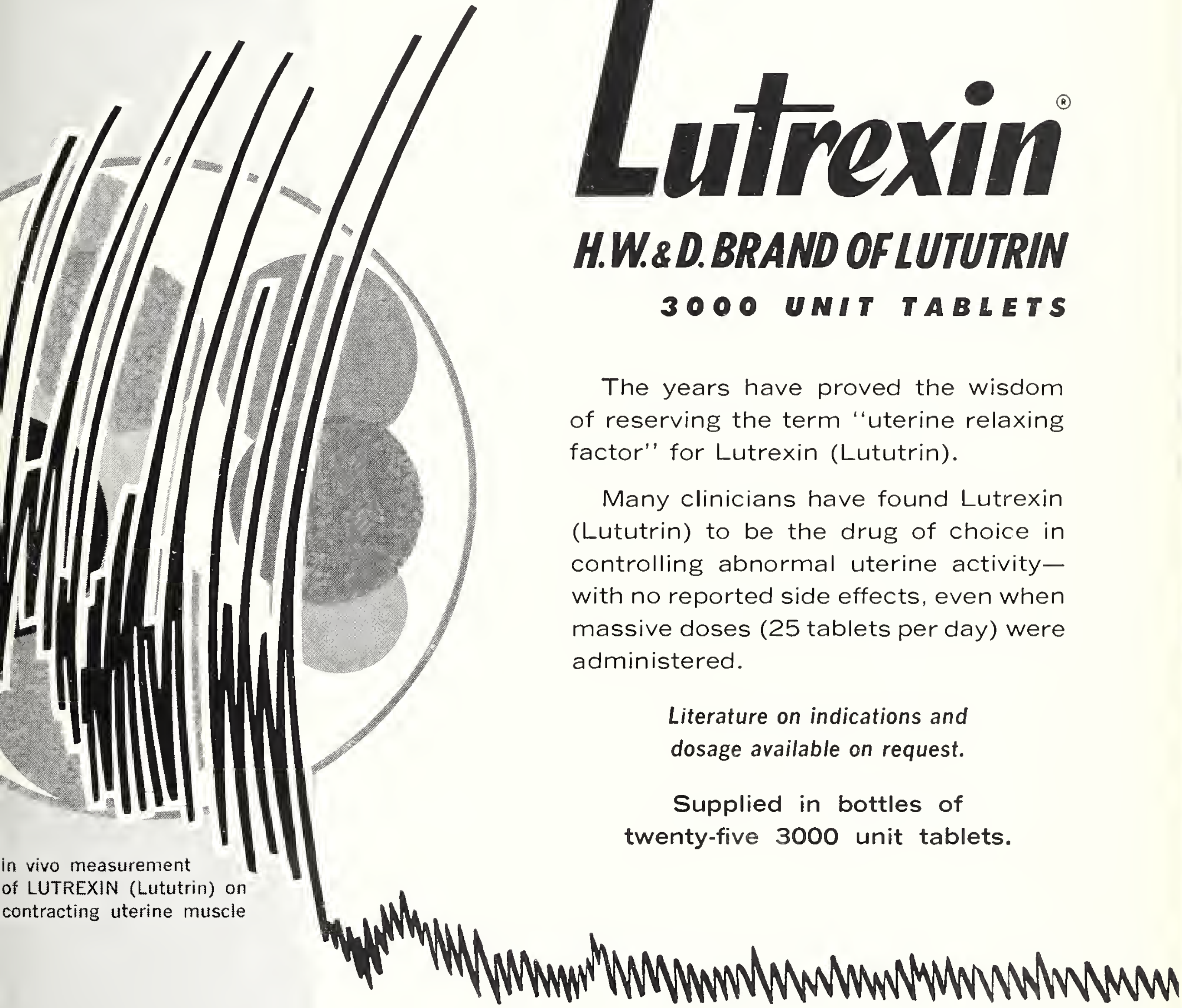

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MISSOURI STATE MEDICAL ASSOCIATION

Program

107th Annual Session—1965

Chase-Park Plaza Hotel, St. Louis

April 4, 5, 6, 7

Sunday, April 4

12:00 noon Registration of Delegates, *Exhibit Hall.*

1:30 p.m. House of Delegates meeting, opening session, *Chase Club.*

3:00 p.m. Reference Committee meetings.

6:30 p.m. Reception and Dinner, *Regency Room and Chase Club.* (Sponsored by the St. Louis County Woman's Auxiliary.)

6:30 p.m. Dinner Meeting, MSMA Committee on Diabetes and Missouri State Diabetes Association, *Stockholm Room.*
Speaker: Arnold Lazarow, M.D., Minneapolis, Minn.
Topic: Insulin Synthesis, Storage and Release.

Monday, April 5

8:00 a.m. Registration, *Exhibit Hall.*

8:30 a.m. Breakfast and scientific session, *Chase Club.*
What's New in Viruses?—John W. Berry, M.D., St. Louis, moderator.
Fundamentals of Virus Structures and Replication—Maurice Green, Ph.D., St. Louis.
Relationship of Viruses to Cancer—Joseph L. Melnick, Ph.D., Houston, Texas.

10:30 a.m. Intermission to view exhibits, *Exhibit Hall.*

11:00 a.m. Scientific session, *Chase Club.*
Some Aspects of Vascular Diseases in Daily Practice—M. S. DeWeese, M.D., Columbia.

11:30 a.m. Scientific session, *Chase Club.*
Recent Progress in Diabetes Research and Its Relation to Treatment—Arnold Lazarow, M.D., Minneapolis, Minn. (Sponsored by the Missouri State Diabetes Association.)

12:00 noon Maternal Welfare Luncheon, *Regency Room.*

12:00 noon Fifty-Year Club Luncheon, *Park Room.*

2:00 p.m. Scientific session. (Medical.), *Chase Club.*
Abdominal Pain—Blaine Z. Hibbard, M.D., Kansas City, moderator.
Abdominal Pain of Obscure Origin—Fred Kern, Jr., M.D., Denver, Col. (Sponsored by Missouri Society of Internal Medicine.)
Vascular Studies of the Large and Small Bowel—Alexander R. Margulis, M.D., San Francisco, Calif. (Sponsored by Missouri Society of Radiology.)
Treatment of Abdominal Angina—E. S. Grawford, M.D., Houston, Texas.

2:00 p.m. Scientific session. (Surgical.), *Lido Room.*
(2:00) Limited Surgical Treatment of the Complications of Duodenal Ulcer Disease with Preservation of the Gastric Secretory Inhibitory Mechanisms—Edgar J. Poth, M.D., Galveston, Texas. (Sponsored by Missouri Surgical Society.)
(2:30) Office Gynecology—J. Russell Vaughan, M.D., St. Louis.
(3:00) The Dizzy Patient—G. O'Neil Proud, M.D., Kansas City, Kansas.

3:30 p.m. Intermission to view exhibits, *Exhibit Hall.*

4:00 p.m. House of Delegates meeting, second session, *Chase Club.*

5:30 p.m. Reference Committee meetings.

6:30 p.m. Missouri Society of Radiology Dinner, *Tiara Room, Park Plaza.*

6:30 p.m. Missouri State Surgical Society Dinner, *University Club.*

Tuesday, April 6

8:00 a.m. Registration, *Exhibit Hall.*

9:00 a.m. Scientific session, *Khorassan Room.*
The Bleeding Patient—C. Rollins Hanlon, M.D., St. Louis, moderator.
X-Ray Negative Upper GI Bleeding—Irving B. Brick, M.D., Washington, D. C.
Technical Factors in Control of Bleeding at Operation—Vallee Willman, M.D., St. Louis.
Operative Procedures in Gastrointestinal Bleeding—John H. Landor, M.D., Columbia.

10:30 a.m. Intermission to view exhibits, *Exhibit Hall.*

11:00 a.m. Scientific session, *Khorassan Room.*
Hemophilus Influenzae Infections in Early Life—William L. Bradford, M.D., Rochester, N. Y., winner of the Missouri University Medical Alumni Award for 1965.

11:30 a.m. Scientific session, *Khorassan Room.*
Sex and the Role of the Practicing Physician—William H. Masters, M.D., St. Louis.

12:00 noon University of Missouri Alumni Luncheon, *Gourmet Room, Park Plaza.*

1:45 p.m. Scientific session, *Lido Room.*
Resuscitation—Donald V. Benson, M.D., Baltimore. (Sponsored by MSMA Committee on Anesthesiology.) Presentation followed by panel discussion and question-and-answer period.

1:45 p.m. Economics session, *Khorassan Room.*
The Business Side of Medicine. (Sponsored by the MSMA Committee on Medical Economics.)
Moderator: Glenn O. Turner, M.D., Springfield.
Panelists: Floyd F. Wehrenberg, Kansas City, Southern Division Manager and Partner, *Professional Management Midwest;* Lee M. Wagy, St. Louis Manager, *Professional Management Midwest;* William H. Kidd, Kansas City Manager, *Professional Management Midwest.*

3:00 p.m. Intermission to view exhibits, *Exhibit Hall.*

3:30 p.m. Scientific session, *Khorassan Room.* (Sponsored by Missouri Heart Association.)
Current Concepts in Heart Disease—Albert M. Estes, M.D., Cape Girardeau, moderator.
Surgical Management of Acquired Valvular Heart Diseases—Arthur C. Beall, Jr., M.D., Houston, Texas.
Diagnosis and Medical Management of Heart Block—Noble O. Fowler, M.D., Cincinnati, Ohio.
Cardiac Pacemaker Implantation for Stokes-Adams Disease—Howard A. Frank, M.D., Boston, Mass.

3:30 p.m. Scientific session, *Lido Room.*
Acute Cervical Spine Trauma—Richard E. Lord, M.D., St. Louis, moderator.
The Cervical Disk—Earl P. Holt, M.D., St. Louis.
Psychiatric Mechanisms in Post-Traumatic Neck Pain—Jackson Smith, M.D., Chicago, Ill.
Methods of Treatment—J. William Fielding, M.D., New York, N. Y.

5:00 p.m. Intermission to view exhibits, *Exhibit Hall.*

5:30 p.m. Washington University Alumni Cocktail Party, *Zodiac Room.*

5:30 p.m. St. Louis University Alumni Cocktail Party, *Stockholm Room.*

7:30 p.m. Banquet honoring Past Presidents of MSMA, *Khorassan Room.*
Practice, Learning and Progress—Vernon E. Wilson, M.D., Dean and Director of the University of Missouri School of Medicine.

Wednesday, April 7

7:30 a.m. House of Delegates meeting, breakfast and final session, *Khorassan Room.*

TECHNICAL EXHIBITS

Abbott Laboratories, North Chicago, Ill. Booth 7.
Aloe/Div. of Brunswick Corp., St. Louis, Mo. Booth 6.
Arner-Stone Laboratories, Inc., Mount Prospect, Ill. Booth 29.
Astra Pharmaceutical Products, Inc., Worcester, Mass. Booth 31.
Ayerst Laboratories, Dallas, Texas, Booths 38 & 39.
Ciba Pharmaceutical Company, Summit, N. J. Booth 19.
Coca-Cola Company, Atlanta, Ga. Booth 20.
Contour Chair Shop, St. Louis, Mo. Booth 34.
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Encyclopaedia Americana Corp., Beverly Hills, Calif. Booth 55.
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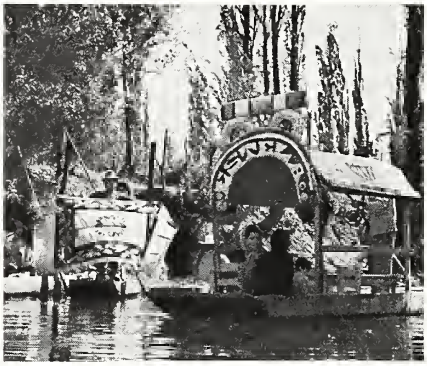
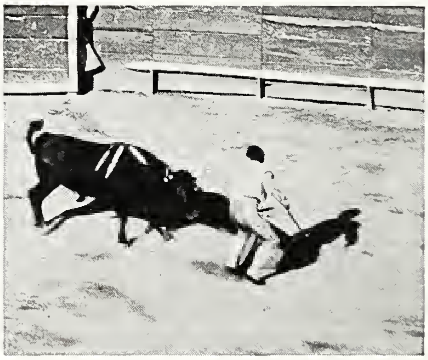
Ortho Pharmaceutical Corp., Raritan, N. J. Booth 23.
Parke, Davis & Company, Detroit, Mich. Booth 17.
Professional Management Midwest, Kansas City, Mo. Booth 27.
Roche Laboratories, Nutley, N. J. Booth 32.
William H. Rorer, Inc., Fort Washington, Pa. Booth 30.
Rowell Laboratories, Inc., Baudette, Minn. Booth 47.
Sanborn Company, St. Louis, Mo. Booth 12.
Sandoz Pharmaceuticals, Hanover, N. J. Booth 3.
W. B. Saunders Company, Philadelphia, Pa., Booth 1.
Schering Corporation, Union, N. J. Booth 42.
G. D. Searle & Co., Chicago, Ill. Booth 15.
Shampaine Industries, Inc., St. Louis, Mo. Booths 10 & 11.
Smith Kline & French, Philadelphia, Pa. Booth 9.
E. R. Squibb & Sons, New York, N. Y. Booth 52.
The Stuart Company, Pasadena, Calif. Booth 24.
Thermo-Fax Sales, Inc., St. Louis, Mo. Booths 13 & 14.
S. J. Tutag & Co., Detroit, Mich. Booth 37.
The Upjohn Company, Kansas City, Mo. Booth 2.
U. S. Vitamin & Pharmaceutical Corp., New York, N. Y. Booth 5.
Vance-Whitworth, Inc., St. Louis, Mo. Booth 18.
Wallace Laboratories, Cranbury, N. J. Booth 43.
Westwood Pharmaceuticals, Buffalo, N. Y. Booth 51.

ONE WAY TO TRY TO AVOID COLDS AND SINUSITIS IS TO GET AWAY FROM FRIGID WEATHER





...but if your patient can't get away, relieve sneezing, running nose, and congestion of colds and sinusitis all day or all night with one

ORNADE® Trademark SPANSULE® brand of sustained release capsules

Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

Summary of contraindications, cautions and side effects: Do not use in patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloric duodenal obstruction, or bladder neck obstruction. Use with caution in the presence of hypertension, hyperthyroidism, or coronary artery-disease. Drowsiness; excessive dryness of nose, throat or mouth; nervousness or insomnia may occur on rare occasions but are usually mild and transitory.

Before prescribing, see SK&F Product Prescribing Information.

Smith Kline & French Laboratories SK&F

medical melange

Notes of interest from Here . . . . and There

The Missouri Society of Pathologists announces plans for a one day seminar on *Clinical and Pathological Considerations of Diseases of the Nervous System*, to be held in St. Louis on Saturday, April 3. The program will be conducted by John J. Kepes, M.D., and Dewey K. Ziegler, M.D., both of the University of Kansas Medical Center. For registration and additional information, contact James G. Bridgens, M.D., St. Joseph's Hospital, Kansas City, Missouri.

The American Association of Blood Banks has passed the 1000 mark in its program of inspecting and accrediting blood banks and hospitals to assure that their techniques of drawing, storing and administering blood meet highest medical requirements. Dr. Oscar B. Hunter, Jr., of Washington, chairman of the AABB inspection and accreditation committee, reports that the number of accredited banks and scope of the inspection program had attained record proportions. Noting the geographic range of AABB inspections, he observed that the U. S. Army Hospital blood bank at Heidelburg, Germany, was recently accredited and that there are now approved banks in Alaska, Hawaii, Puerto Rico and the Canal Zone.

A new program to raise standards in nursing homes and homes for the aged has been launched by five national health agencies. They are the American Association of Homes for the Aging, the American Dental Association, the American Nurses' Association, the National Association of Social Workers, and the American Hospital Association.

They will review qualifications of the nursing homes and homes for the aged seeking to meet approval standards set by these five agencies as members of the American Hospital Association Committee on Approval of Special Health Care Facilities. The new approval program replaces an AHA registration program begun in 1958 for inpatient care institutions other than hospitals.

A "4 in 1" biological package which provides simultaneous active immunization against poliomyelitis, diphtheria, pertussis, and tetanus in a single 1-cc. injection is being introduced by Eli Lilly. The new immunizing agent is Tetra-Solgen® (diphtheria and tetanus toxoids and pertussis vaccine, alum precipitated, and poliomyelitis vaccine, Lilly). Tetra-Solgen offers a simple solution to the problem of maintaining the stability of the pertussis component in a quadruple-antigen preparation. The D-P-T component and the poliomyelitis vaccine are not mixed until the physician is ready to use them.

A concentrated form of Tri-Solgen® (diphtheria and tetanus toxoids and pertussis vaccine combined, alum precipitated, Lilly (in a 1-cc. vial is added to a 9-cc. bottle of poliomyelitis vaccine. The resulting ten-dose mixture will retain full potency for at least one month.

The Second Edition of the *Manual of Standards in Obstetric-Gynecologic Practice* will be published March 1 by The American College of Obstetricians and Gynecologists. The manual is more comprehensive and three times greater in volume than its predecessor, which was published in 1959. The Manual is designed for physicians, nurses, hospital administrators, and other personnel as a guide in providing proper facilities and good quality care for obstetric and gynecologic patients. The manual represents a compilation of recommendations and is not intended to be a rigid set of inviolate rules.

(Continued on page 169)

*
She lost weight

***a result of**

'METHEDRINE'® brand

METHAMPHETAMINE HYDROCHLORIDE

therapy

Her once unruly appetite is now well tamed with 'Methedrine' (methamphetamine hydrochloride)...an easy way to help control food craving and "hunger pains."

Side effects: Insomnia may occur if taken later than 6 hours before retiring. The usual peripheral actions of sympathomimetic amines (vasoconstriction and acceleration of the heart) are minimal and little noticed on low or moderate dosage.

Complete literature available on request from Professional Services Dept. PML

Contraindications and precautions: Should not be used in patients with myocardial degeneration, coronary disease, marked hypertension, hyperthyroidism, insomnia or a sensitivity to ephedrine-like drugs. Moderate hypertension in the obese is not necessarily a contraindication since it may be relieved as the overweight is reduced.

'Methedrine' brand Methamphetamine Hydrochloride: Tablets–5 mg., scored, in bottles of 100 and 1000.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

medical melange (cont'd.)

The American Academy of Pediatrics has recommended that all newborn infants be tested for phenylketonuria (PKU), before they are discharged from the hospital. The blood test must not, however, be performed until after the infant has been on milk feedings for 24 hours. Two types of blood tests are available—one is a bacteriological assay (the Guthrie test) and the other includes chemical procedures. The recommendation, made by the Academy's Committee on Fetus and Newborn, was reported in the January *News Letter.*

The Committee also recommended that the urine of all newborn infants be tested for inherited metabolic disorders which interfere with the body's ability to utilize certain types of sugar and which may lead to retardation or death.

Good results in relieving labor pains are reported when Carbocaine was given in paracervical block anesthesia, with no harmful effects to mother or fetus, according to Dr. Thomas J. Durkin, chairman of the radiology department of the University of Chicago. In a study of 152 women in labor, he states in *Illinois Medical Journal* (126:431, 1964) that the procedure produced only one complete failure and several partial failures. Otherwise, painful contractions were totally eliminated except in some patients at the end of the first stage of labor. He says his results with Carbocaine (mepivacaine) confirm a previous report of 96% excellent-good results. Carbocaine was given without epinephrine.

Aaron D. Freedman, M.D., Ph.D., an internationally known research authority on cardiac and renal diseases and cellular enzyme systems has been named to be Chairman of the Department of Internal Medicine at Menorah Medical Center in Kansas City. Dr. Freedman presently is an assistant professor of Medicine at Columbia University College of Physicians and Surgeons in New York and Visiting Physician at the Francis Delafield Cancer Hospital. At Menorah he will also serve as chairman of the Division of Experimental Internal Medicine of the Danciger Institute for the Health Sciences. Dr. Freedman is planning to take over his new posts by April 1. An important part of Dr. Freedman's responsibilities will be the development and administration of courses and seminars in Internal Medicine for midwest physicians who attend the Danciger Institute.

The 1965 Spring Meeting of the Missouri Ophthalmological Society will be held at the Chase-Park Plaza Hotel in St. Louis on Friday and Saturday, May 7 and 8. The two day program will include presentation of papers and panel discussions, clinic open house, annual election of members to the Board of Directors and a variety of social events for members and their wives. For further information, contact John A. Buesseler, M.D., University of Missouri School of Medicine, Columbia.

The Medical Department of Pfizer Laboratories has announced that it will make available 88 medical student scholarships for the 1965-1966 academic school year. The scholarship program provides each of the 88 medical schools in the United States with a $1,000 scholarship, each scholarship administered solely by the dean of each medical school—or by a committee established by him. Selection of the recipient of the scholarship may be on the basis of scholastic record, financial need, or other criteria determined by the individual medical school. In addition to this four year old scholarship program, Pfizer has also provided the American Medical Association's Educational and Research Foundation with $100,000 in each of the past two years.

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Complete psychiatric treatment in an environment for cure. A 50 bed hospital with the most modern diagnostic and therapeutic equipment for the treatment of nervous and mental disorders.

LICENSED: Illinois Department of Mental Health.
MEMBER: Illinois Medical Service (Blue Cross-Blue Shield).

ACCIDENT AND HEALTH INSURANCE

The Missouri State Medical Association since 1943 has made available to its members a Special Disability Income Benefits Policy issued by our "Loyalty Group" Companies now a part of the America Fore-Loyalty Group Insurance Companies—the largest casualty-fire underwriting group in the world. The low cost at which the policy is offered is made possible through the purchasing power of the membership of your association as a whole.
Now, new plans offering long term income benefits as well as a special Major Hospital-Nurse Expense Plan have been added to the program. We suggest you who are already enrolled make sure your policy includes the maximum benefits. Those of you not enrolled, we suggest you do so today. Call or Write:

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111 North Fourth St., St. Louis 2, Mo.
(Eastern Missouri Administrators)

Altman-Singleton & Co.
114 W. 10th St., Kansas City 5, Mo.
(Western Missouri Administrators)

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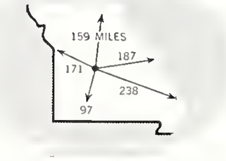

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...you want a
dependable tranquilaxant
plus the analgesic effect
of aspirin

x

TRANCO·GESIC*

CHLORMEZANONE 100 mg. with ASPIRIN 300 mg.

ANCO-GESIC...for the more comprehensive
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atica, lumbago and musculoskeletal pain asso-
ted with strains or sprains...acts dependably
l with unsurpassed tolerance. Contraindicated
persons known or suspected to have an idio-
crasy to aspirin. Side effects such as gastric
tress, occasional weakness, sedation or dizzi-
s may be noted occasionally. Ordinarily, these
y be reversed by a reduction in dosage or tem-
ary withdrawal of the drug. The usual adult
age is 2 tablets three or four times daily. The
ggested dosage for children from 5 to 12 years
tablet three or four times daily.

*Trademark

Winthrop Laboratories, New York, N. Y. Winthrop

FINANCIAL STATEMENT FOR THE YEAR 1964

LENNERTSON & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
214 South Bemiston Avenue

ST. LOUIS, MISSOURI 63105

January 27, 1965

Missouri State Medical Association,
634 North Grand Blvd.,
St. Louis, Mo.

Gentlemen:

The accounts of the Missouri State Medical Association, a non-profit Missouri corporation were examined for the year 1964 and a report thereon is presented together with the following exhibits:

Exhibit A	Balance Sheet
Exhibit B	Income Statement
Exhibit C-1	Statement of Investments
Exhibit C-2	Statement of Committee and Meeting Expense
Exhibit D	Dues Receivable and Membership by Societies

It should be noted that members' dues and investment income are taken into income on the cash receipt basis whereas the other accounts are maintained on the accrual basis. Rentals received in advance for Annual Session exhibit space are shown as prepaid and carried forward to the year to which they apply.

Scope of Examination

The Balance Sheet at December 31, 1964 and the Income Statement for the year then ended were reviewed. Examinations or tests were made of the accounting records, in the manner and to the extent deemed appropriate, without making a detailed audit of the transactions.

Recorded cash receipts for the year were traced in total into the bank as deposits and disbursements for the period were substantiated by an inspection of paid checks, purchase invoices and other data on file.

Income Statement

The financial result of the activities of the Association for the year 1964 was an excess of income over expenses of $2,308.46 as set forth in Exhibit B. Exhibit C-2 presents a summary of committee and meeting expenses for the year.

Selective tests were made of the income and expense accounts for the period. It was noted that space in The Journal was contributed to the United States Treasury Department for bond advertising, to members for small classified ads and to the Missouri State Medical Foundation.

Balance Sheet

The financial position of the Association at December 31, 1964 is presented in Exhibit A. Comments on the larger Balance Sheet accounts follow:

Cash in banks, as shown by the books, was reconciled to the regular monthly bank statements and confirmations received from the depositaries. The petty cash fund was verified by physical count.

Investments with a cost of $112,488.30 were confirmed by a statement from the custodian, Mercantile Trust Company. Investment income for the year consisted of the following:

Interest and Discount on Bonds	$2,903.00
Dividends on Stock	1,019.45
Total Investment Income	$3,922.45

Accounts Receivable of $6,084.34 represent the unpaid balance due from Journal advertisers. Of this amount $6,047.34 was due from the State Journal Advertising Bureau as follows:

December 1964	$2,484.76
November 1964	2,324.73
Prior to November	1,237.85
Total	$6,047.34

On January 2, 1965, a check was received paying $2,270.59 of the November accounts and $856.20 on the items prior to November.

Unpaid Dues of $1,750.00, offset by a reserve account in like amount, represent 1964 dues of delinquent members carried at the requests of local societies. Other delinquent members were dropped from membership in accordance with the by-laws. Exhibit B presents a summary of unpaid dues and membership by societies, as shown by the records of the Association.

Furniture and Fixtures continue to be stated in the fixed amount of $1,000. Equipment purchases and repairs for the year in the sum of $472.21 were charged to expense in lieu of depreciation.

The records were carefully reviewed for liabilities at December 31, 1964 and it is believed that all current liabilities of substantial amount are included in the Balance Sheet. The bylaws require the Association to furnish financial assistance up to $300, on each mal-practice suit. The Association reports one suit in litigation at year-end.

Exhibitors have made advance payments of $5,020.00 for annual session exhibit space and these payments will be taken into income when earned in 1965.

The excess of assets over liabilities in the amount of $125,521.10 is shown in the Balance Sheet as a "Reserve for Future Activities."

General

During the year, payments were made to or for the following sponsored organizations:

Missouri State Medical Association Pension Trust	
Employees' Retirement Insurance Premiums	$3,302.27
Employees' Pension Plan Contribution	4,697.73
Total	$8,000.00
Missouri State Medical Foundation	
Stationery, Printing, Insurance and Audit	$1,448.11

The Missouri State Medical Association collects as a part of its annual dues $7.50 per active member and $3.75 per junior member for the Missouri State Medical Foundation. The Association also collects $45.00 from each member for the American Medical Association. The amounts collected for the Foundation and the A.M.A. have been remitted except for the amounts shown as liabilities on the balance sheet.

Insurance policies were inspected and the following general insurance was in force at the close of the year:

Insurance on	*Type of Coverage*	*Amount*
Furniture and Fixtures	Fire and Extended Coverage (80% co-ins.)	$6,500
Employees	Workmen's Compensation	Statutory
Lessee's Liability	Bodily Injury	$25,000/50,000
President and Treasurer	Fidelity Bond	$20,000
All Other Employees	Fidelity Bond	$5,000
Automobiles of Executive Secretary Field Secretary Executive's Assistant	Non-ownership—Bodily Injury	$50,000/100,000
	Non-ownership—Property Damage	$5,000

Subject to the comments thereon, the attached statements, in our opinion, present fairly the financial position of the Missouri State Medical Association at December 31, 1964 and the financial results of its activities for the year then ended, in accordance with accepted principles of accounting applied on a basis consistent with that of the preceding year.

Yours very truly,
Lennertson & Company
Certified Public Accountants.

Exhibit A

Missouri State Medical Association
Balance Sheet, December 31, 1964

Assets		
Cash		
Mercantile Trust Company (Treasurer's Account)	$ 27,095.10	
Mercantile-Commerce National Bank (Secretary's Account)	419.19	
Petty Cash Fund	25.00	$ 27,539.29
Investments at Cost (Exhibit C-1)		
U. S. Government Bonds	$ 80,472.48	
Corporate Bonds	5,000.00	
Common Stocks	27,015.82	
Total (Market Value $117,247.27)		112,488.30
Accounts Receivable		
Advertisers	$ 6,084.34	
Mercantile Trust Company—Investment Custodian	1,151.61	7,235.95
Dues Receivable—Exhibit D		1,750.00
Furniture and Fixtures at Stated Values		1,000.00
Advances for Travel Expenses		341.21
		$150,354.75
Liabilities		
Accounts Payable		
Supplies and Expenses	$ 9,265.27	
Payroll Taxes	778.55	
Due Missouri State Medical Foundation	7,974.83	
Due American Medical Association	45.00	$ 18,063.65

Deferred Credit to Income		
Advance Payments by Exhibitor		5,020.00
Contingent Liability to Members on Malpractice Suits—One Reported $300.00		
Reserve for Uncollected Dues		1,750.00
Reserve for Future Activities		
Balance January 1, 1964	$123,212.64	
Excess of Income Over Expenses for the Year 1964 (Exhibit B)	2,308.46	125,521.10
		$150,354.75

EXHIBIT B

Missouri State Medical Association
Income Statement for the Year 1964

Particulars	*General Activities*	*Journal Publication*	*Total*
Income			
Dues Received (Includes $1.50 Per Member Annually for THE JOURNAL)	$135,602.65	$ 5,347.50	$140,950.15
Rentals—Annual Session Exhibit Space	8,575.00		8,575.00
Subscriptions to THE JOURNAL—Nonmembers		258.90	258.90
Advertising Space—THE JOURNAL		35,573.87	35,573.87
Investments—Interest and Dividends	3,922.45		3,922.45
Collection Fees on A.M.A. Dues	1,717.65		1,717.65
Rental Space—Office Space	540.00		540.00
Total Income	$150,357.75	$41,180.27	$191,538.02
Expenses			
Salary—Executive Secretary	$ 10,800.00	$ 5,400.00	$ 16,200.00
Office Salaries	33,234.51	16,617.25	49,851.76
THE JOURNAL—Paper, Printing, etc.		29,725.69	29,725.69
Cash Discounts to Advertisers		215.41	215.41
Commission on JOURNAL Advertising		6,426.16	6,426.16
Postage	3,599.69	875.90	4,475.59
Committee and Meeting Expenses (Exhibit C)	49,535.30		49,535.30
Custodian Fees—Investments	244.47		244.47
Directories and Clipping Service	566.63		566.63
Dues and Subscriptions	431.00		431.00
Employees' Pension Plan Contributions	8,000.00		8,000.00
Equipment Purchases and Repairs in Lieu of Depreciation	472.21		472.21
General Expense	120.17		120.17
Insurance—Blue Cross	550.59		550.59
Insurance—General	332.98		332.98
Missouri State Medical Foundation	1,448.11		1,448.11
Office Rent and Light	4,592.28		4,592.28
Professional Fees	4,801.63		4,801.63
Stationery, Printing and Office Supplies	3,955.79		3,955.79
Student Award	225.00		225.00
Taxes—Payroll and Personal Property	1,597.16		1,597.16
Telephone and Telegraph	2,480.32		2,480.32
Traveling Expense—Executive Secretary	449.49		449.49
Traveling Expense—Field Secretary	2,183.80		2,183.80
Traveling Expense—Executive Assistant	248.50		248.50
Traveling Expense—Assistant Editor	99.52		99.52
Total Expenses	$129,969.15	$59,260.41	$189,229.56
Excess of Income or (Expenses)	$ 20,388.60	($18,080.14)	$ 2,308.46

EXHIBIT C-1

Missouri State Medical Association
Statement of Investments, December 31, 1964

Description	*Bonds at Par Value*	*Cost*
U. S. Treasury 2½% Bond 6/15/67-62	$10,000.00	$ 10,000.00
U. S. Treasury 2½% Bond 12/15/68-63	10,000.00	10,000.00
U. S. Treasury 2½% Bond 6/15/69-64	10,000.00	10,000.00
U. S. Treasury 2½% Bond 3/15/70-65	10,000.00	9,980.44
U. S. Treasury 2½% Bond 3/15/71-66	5,500.00	5,469.92
U. S. Treasury 3⅞% Bond 5/15/68	10,000.00	10,000.00
U. S. Treasury 4 % Bond 10/ 1/69	25,000.00	25,022.12
Pacific Gas and Electric 4½% Bonds 6/1/90	5,000.00	5,000.00
Central and Southwest Corp. 200 Shares		6,345.62
Johns Manville Corp. 100 Shares		5,582.34
Morgan Guarantee Trust Co. of N. Y. 55 Shares		5,106.55
Standard Oil Co. of California 105 Shares		5,045.94
Union Carbide Corp. 37 Shares		4,935.37
Total		$112,488.30

EXHIBIT C-2

Statement of Committee and Meeting Expenses
For the Year 1964

Annual Session		$14,605.58
Council Meetings and Councilors' Expenses		6,566.13
Delegates to A.M.A.		5,429.39
President and Secretary Conference		1,101.82
Public Service		19,194.68
Woman's Auxiliary		1,680.50
Committees:		
Cancer	$ 18.07	
Cardiac	16.42	
Civil Defense	195.38	
Industrial Health	26.84	
Infant and Child Care	40.39	
Jefferson City Branch Office Study	137.81	
Laboratory Medicine	17.05	
Maternal Welfare	30.78	
Mental Health	42.86	
Rural Medical Service	32.96	
Scientific and Postgraduate Work	296.46	
Tuberculosis	87.82	
Venereal Disease Control	14.36	
Total		957.20
		$49,535.30

EXHIBIT D

Missouri State Medical Association
Dues Receivable and Membership by Societies
December 31, 1964

MEMBERSHIP

Societies	*Junior*	*Active*	*Honor*	*Total*	*Unpaid Dues*
Andrew		4	1	5	
Audrain	1	17	1	19	
Barton-Dade		8		8	$ 50.00
Benton			1	1	
Boone	19	98	2	119	
Buchanan	4	74	14	92	75.00
Butler-Wayne-Ripley	2	33		35	
Callaway		18	2	20	
Cape Girardeau	6	47	4	57	
Carter-Shannon		1		1	
Chariton-Macon-Monroe-Randolph		20	4	24	
Clay	11	51	1	63	
Clinton	1	5		6	
Cole	3	41	4	48	
Cooper	2	10		12	
Dallas-Hickory-Polk		6	2	8	
Dunklin	1	16	5	22	
Franklin-Gasconade-Warren	2	26		28	50.00
Grand River	4	39	4	47	
Greene	10	145	11	166	
Henry		11	1	12	
Howard	2	5		7	
Jackson	65	620	114	799	175.00
Jasper	3	56	6	65	50.00
Jefferson		14	3	17	
Johnson		11	1	12	
Lafayette-Ray	6	18		24	
Lewis-Clark-Scotland		2		2	
Lincoln-St. Charles	14	21		35	
Marion-Ralls-Shelby	3	23	4	30	
Mid-Missouri		27	1	28	
Miller		2		2	
Mineral Area	1	27	4	32	
Moniteau		3	1	4	
Montgomery		3		3	
Morgan		4		4	
Northwest Missouri		16	2	18	
North Central		10	1	11	
Ozarks	2	41	8	51	
Pemiscot		16	2	18	50.00
Perry-Ste. Genevieve		10	1	11	
Pettis	2	25	5	32	50.00
Pike	4	5	2	11	
Platte		5	1	6	
St. Louis City	212	1,036	93	1,341	1,175.00
St. Louis County	29	385	40	454	
Saline	1	13	2	16	
Semo	1	29	4	34	
South Central	2	16	2	20	
Webster		3	1	4	
West Central	6	30	7	43	75.00
Totals	419	3,146	362	3,927	$1,750.00 (A)

(A) Delinquent dues of members at December 31, 1964 carried at the request of local societies.

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Lov-é brassieres provide correct physiological support because they are custom-fitted to your precise instructions. They give gentle-yet-firm support, more youthful, normal contours and freedom from shoulder strap strain for even the most difficult problem figures. And after breast surgery, the exclusive, patented Lov-é "Twin" creates natural restoration for perfect confidence. Also a complete line of maternity, nursing, sleeping bras and hospital binders. All with the gentle femininity that women appreciate. Have your nurse call for post-mastectomy exercise charts and literature.

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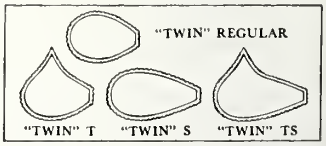

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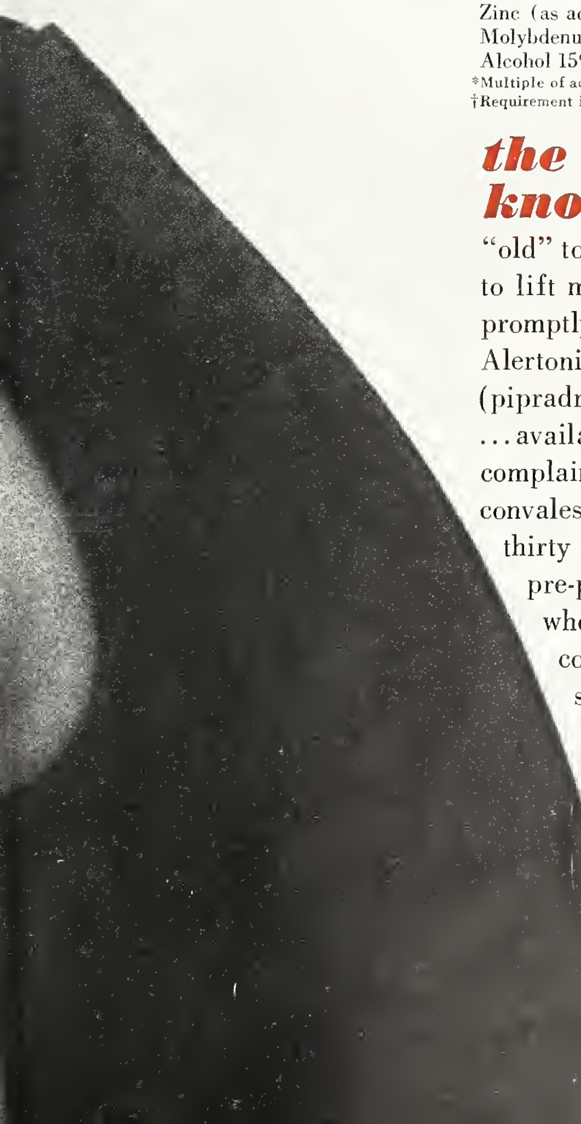

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Ramblings of the Field Secretary

The 130th Annual Meeting of the St. Louis Medical Society, highlighted by the installation of officers for 1965, was held Tuesday evening, January 5. Dr. David N. Kerr, retiring president, called the meeting to order. A large audience including doctors, their wives and guests were on hand to view the installation ceremonies. Dr. Kerr briefly reviewed a number of projects the Society had carried out over his presidential year. He was high in his praise of the cooperation given him by other officers of the Society as well as committees and particularly the St. Louis Medical Society office staff. He pledged his full cooperation and assistance to the new officers and committees for 1965. The newly elected Society officers were escorted to the rostrum as the installation proceeded.

New officers of St. Louis Medical Society. (l. to r., seated) Max S. Franklin, Vice President; David N. Kerr, retiring President; Walter T. Gunn, new President; George L. Hawkins, Jr., President-Elect; Richard V. Bradley, Secretary; (standing) Councilors Edwin C. Ernst, Jr., Malcolm B. Bawell, D. Elliott O'Reilly and Charles A. Jost.

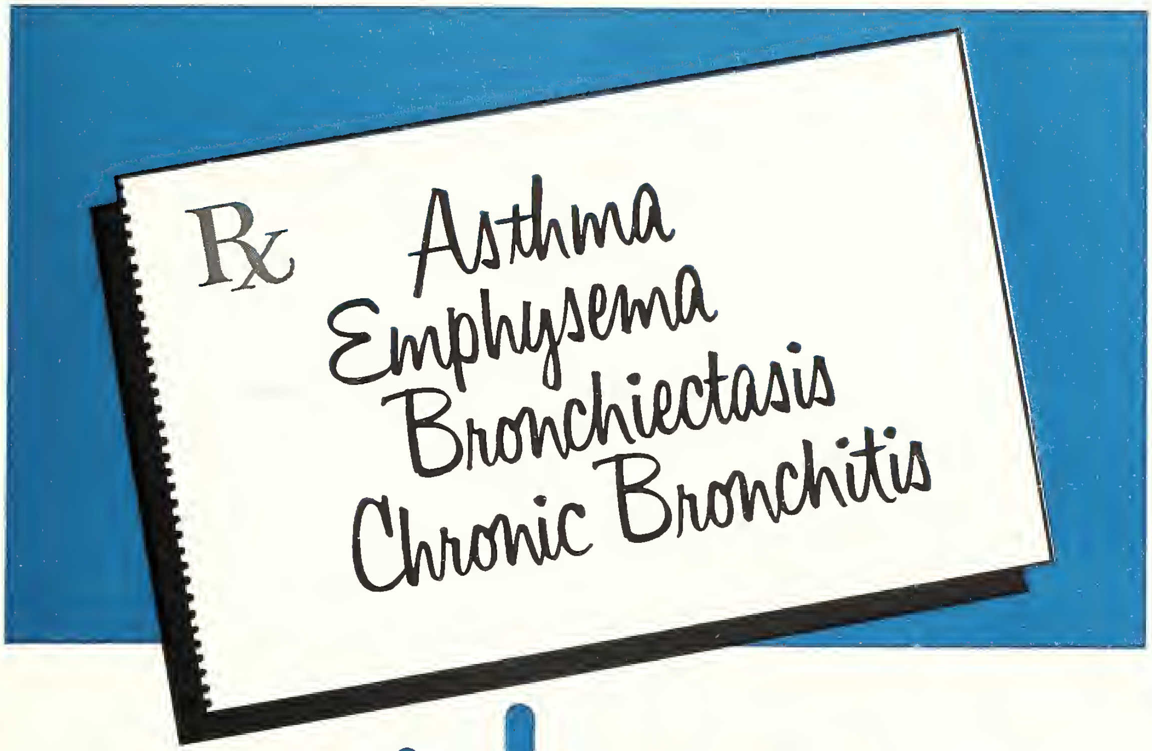
Father escorts son into office in St. Louis Medical Society. Edwin C. Ernst (l.) assists Charles R. Gulick (r.) in making certain that Doctor Ernst, Jr. is properly installed as a new Councilor.

Dr. Kerr's last official act as president of the Society was to turn the gavel over to the incoming president, Dr. Walter Gunn. Dr. Gunn presented Dr. Kerr with the retiring president's plaque and congratulated him on his direction of the Society during his term as president in 1964. The new president gave a short address pointing out a number of projects to be worked on in 1965 as well as the continuation of programs already in operation. He called for the cooperation of the entire membership of the St. Louis Medical Society in the year ahead and pledged his best efforts to the objectives and purposes of the Society.

New officers of St. Louis County Medical Society pose for first formal portrait. (l. to r.) Melvin M. Schwartz, Secretary; C. Howe Eller, President-Elect; Charles Miller, Jr., Vice President; and (seated) James C. Sisk, President.

Following the formal installation ceremonies a reception was held.

On Wednesday evening, January 13, the St. Louis County Medical Society held its 1965 installation dinner-dance. Approximately 150 doctors, their wives and special guests were present. At the conclusion of the social hour and dinner, the retiring president, Dr. James R. Nakada, called the meeting to order. The new officers of the Society and guests were introduced by Dr. Nakada. He then discussed a number of programs which the Society had carried on during the past year, some of which will be carried



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Outgoing President of St. Louis County Medical Society, James R. Nakada and Mrs. Nakada are presented with a silver tray in appreciation for their year of service. The presentation is made by the new President, James C. Sisk.

forward under the leadership of the incoming president. At the conclusion of his remarks and his thanks to the many members, officers, committees, office staff and Auxiliary, Dr. Nakada turned the gavel over to his successor, Dr. James Sisk. On behalf of the entire Society, Dr. Sisk presented Dr. and Mrs. Nakada with a beautiful silver tray in appreciation for their outstanding service during his term as president in 1964. In his inaugural talk Dr. Sisk reviewed a number of concrete things he felt must be done by the medical profession, and others who think along the same lines, in handling the medical care problems before the nation. He pledged his best efforts to the Society's programs for 1965.

Three people, well known in the St. Louis area, were honored by the Society for their generous services and contributions to the medical profession and to the health and welfare of the community. They were Mr. Paul Koenig, attorney for St. Louis County Medical Society; Mrs. Betty Sutter, President-Elect of the AMA Woman's Auxiliary; and Dr. Guy N. Magness, past president of MSMA. They were each given a gold key and a check for $100.00. The checks, at their requests, were directed to be given to worthy causes.

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*Morador, J. L. et al.: Antibiot. Ann. 1959-1960:716.

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M. WENDELL DIETZ, M.D., *Springfield*

Neonatal Intestinal Obstruction

Case Reports

A résumé of clinical and roentgenologic diagnostic features of four unrelated, congenital causes of colon obstruction in the newborn. The syndromes discussed are: imperforate anus, anorectal stenosis, aganglionic megacolon and meconium ileus. Pertinent roentgen manuevers are summarized and correlated with fundamental pathological findings.

Doctor Dietz is Director of the Department of Diagnostic Radiology of the Burge-Protestant Hospital and Clinical Assistant Professor of Radiology at the University of Missouri School of Medicine.

Within a 22 day interval, three male infants were referred for radiologic investigation of anorectal abnormalities. The clinical and roentgen signs of these three patients suffering diseases of distinctly diverse nature warrant review. In two instances, the syndrome was classic; the third patient exhibited a rare, intriguing variation.

The cases were similar in that, in each instance the organic lesion was a congenital malformation immediately productive of mechanical colonic obstruction.

Prompt surgical intervention was mandatory at the time of recognition of two conditions. The third lesion is correctible by a simple office procedure.

In two patients, clinical examination was diagnostic and roentgen studies were supplementary although contributory. Inasmuch as the role of the radiologist is paramount in the diagnosis of the third syndrome, this type of anomaly will be considered in some detail.

Case: Imperforate Anus

The first case in this series of neonatal colonic obstructions was a one day old white male with an imperforate anus. A small dimple appeared where the anus would normally be (Fig. 1). Stimulation of the overlying skin elicited a sphincteric "winking" response. Physical examination disclosed no sign of intestinal distention, an associated fistula or an unrelated anomaly.

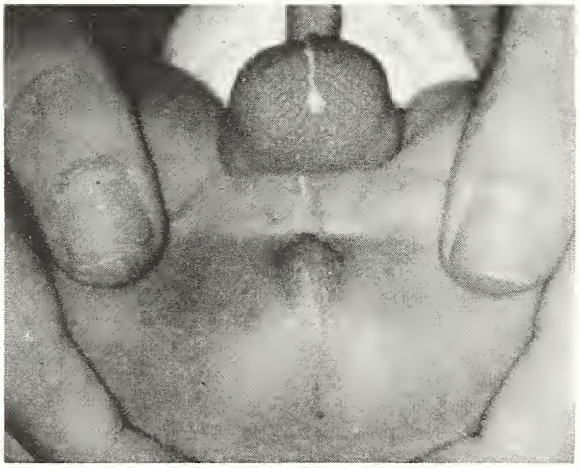


Fig. 1 Imperforate anus.

Roentgen investigation by the Wangensteen-Rice method demonstrated a blind rectal pouch several centimeters proximal to the anal membrane (Fig. 2).[1] Performance of an anoplasty was followed by normal bowel function and an uneventful postoperative course.

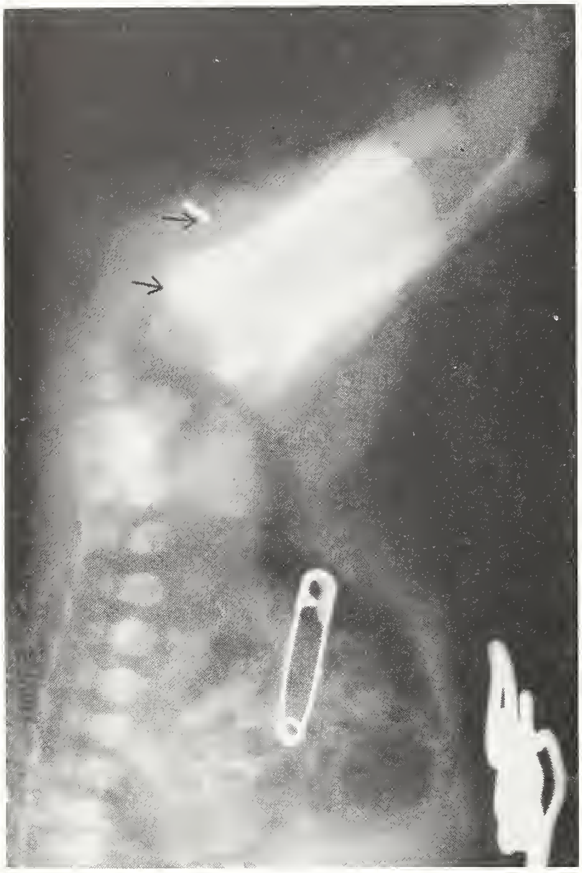


Fig. 2 Blind rectum.

Discussion

This malformation is the Type 3 lesion specified by the Ladd and Gross classification of anorectal anomalies (Fig. 3).[2] Although the rectum also ends blindly in Type 4 lesions, the distal tract is patent. Type 1 includes cases of anal or rectal stenosis. Type 2 is membranous imperforate anus; the separating partition is a thin septum.

Of the extensive series of 507 such anomalies analyzed by Gross, the vast majority, 443 cases, were Type 3 malformations: imperforate anus and blind rectum. In addition to prevalence, Type 3 lesions merit particular emphasis because of a decided predilection for associated fistulas. No less than 80% of the Type 3 cases compiled by Gross were accompanied by a fistula connecting the occluded rectum either to the genito-urinary system or the perineum.

Since the value of the lateral roentgenogram of the inverted patient with a lead marker on the site of the anus was established in 1930, the technique has commanded unchallenged priority in the radiologic study of these cases. Air illuminating the rectal pouch accurately indicates the location of the obstruction in relation to the anal membrane. Furthermore, the passage of air into the urinary bladder may disclose a coexistent but unsuspected rectovesical fistula.

Nevertheless, at least four circumstances may occur in which the maneuver may fail to supply data of this nicety.

First, prior to the end of the first 24 hours of life, a distal bowel devoid of swallowed air cannot be considered pathological.

Second, not only can meconium delay the passage of air in the colon, it can also prevent its entry into the distal pouch by tenaciously filling it despite inversion of the infant. Any estimate of the height of the obstruction above the anus is then necessarily erroneous.

Third, a blind rectal pouch will fail to fill with air if an accompanying fistula is sufficiently large to allow egress of rectal gas through its lumen.

A fourth opportunity for error arises if an infant is positioned for filming too swiftly. Absence of rectal air may suggest an extensive dead space. A leisurely conducted re-examination may permit the air to rise toward the anus revealing minimal dead space.

Additional contributions by the radiologist to

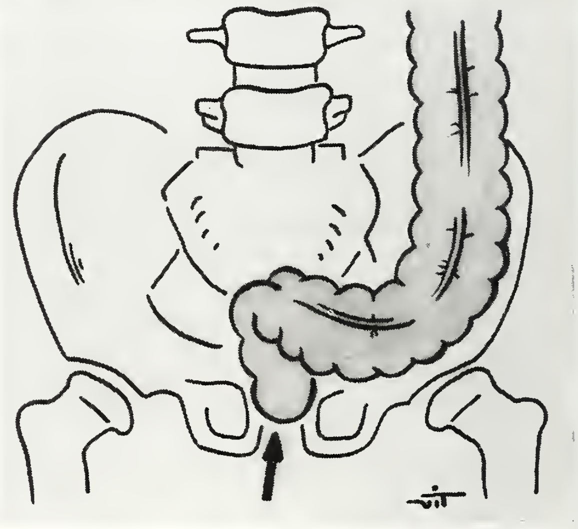


Fig. 3 Ladd and Gross, Type 3, anorectal malformation.

the preoperative investigation of these patients include the delineation of external fistulas with opaque media, the disclosure of internal fistulas by opaque cystography and, not of least importance, the detection of additional anomalies. Congenital lesions other than the anorectal malformation were responsible for death in 42 patients of Gross's series. Cardiovascular, skeletal and other digestive tract anomalies are particularly numerous in this disease.

CASE: ANORECTAL STENOSIS

The second of the triad with an anorectal malformation was a seven month old white male referred for colonic examination because of constipation since birth. Spontaneous bowel movements were scanty, rare and accompanied by considerable straining. Enemas or suppositories were mandatory for relief of the severe constipation.

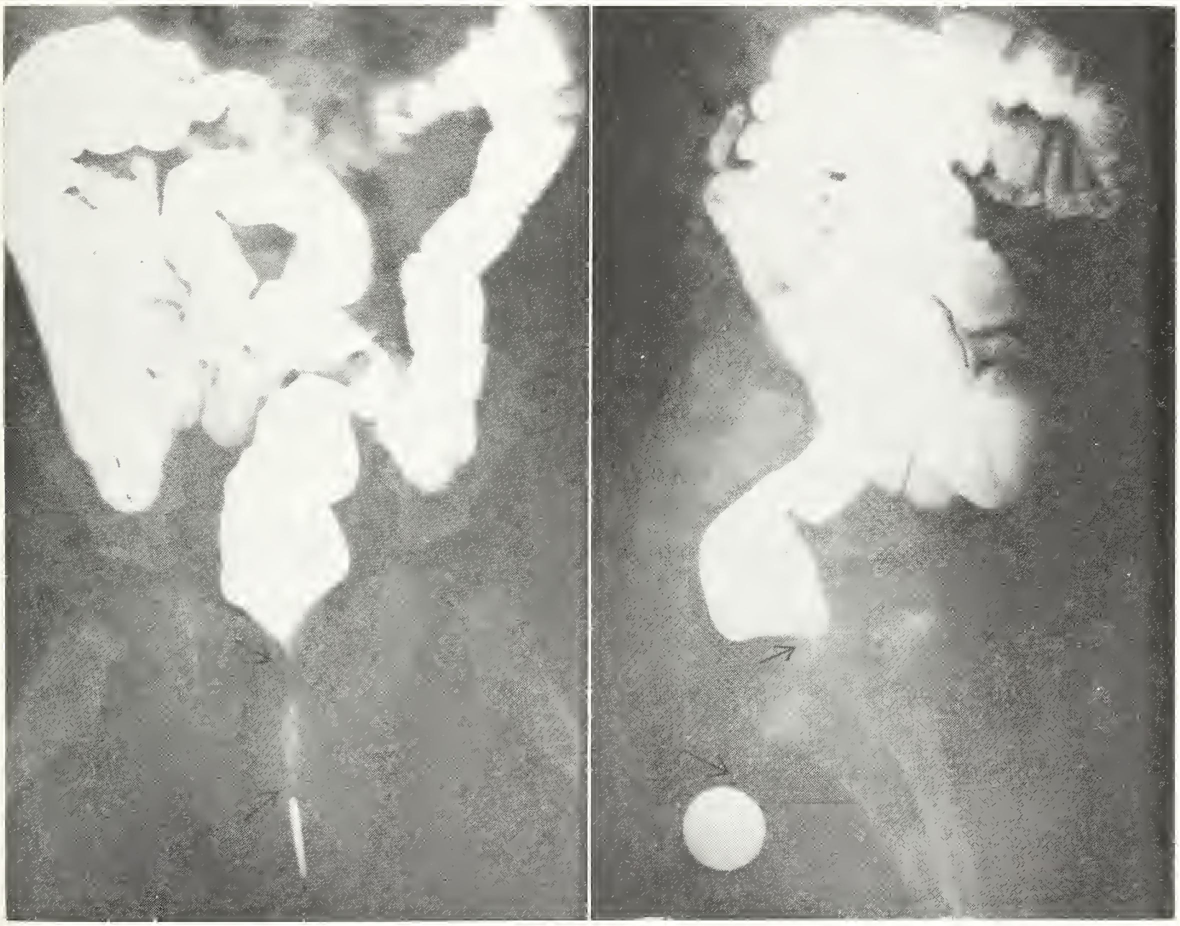
The examining finger encountered a complete obstruction approximately three centimeters beyond the anal orifice. Anoscopic examination revealed an iris-like membrane, resembling an uterine cervix, in the region of the anorectal junction. A ribbon-like stool was extruding from a small central channel in the occluding band.

Pre-evacuation barium enema studies demonstrated no extra-rectal abnormality. The infant was observed during a lengthy interval after the removal of the rectal balloon. Although he cried incessantly and strained forcibly to expel the enema fluid, only a few ounces were evacuated. Anteroposterior and lateral projections, at this time, revealed a sling-like diaphragm obstructing the opacified colon above (Figs. 4 and 5). Distally, the anal canal was practically devoid of opaque medium. The highly placed cecum and redundant sigmoid flexure are not unusual colon characteristics in this age group.

The barium fluid was recovered only after repeated digital examinations and cleansing enemas. The latter maneuvers may well have effected dilatation of the stenosis for shortly thereafter the patient's mother reported the onset of fairly normal bowel movements and declined to return with the child.

DISCUSSION

A congenital rectal stenosis of this variety is classified by Ladd and Gross as Type 1: A partial membranous occlusion usually at the



Figs. 4 and 5 Partial colonic obstruction.

anorectal line due to faulty resorption of the anal plate (Fig. 6). The constriction may be annular or crescentic in shape and central or lateral in location. The obstructing membrane is composed of mucosa and submucosa and is soft and elastic.

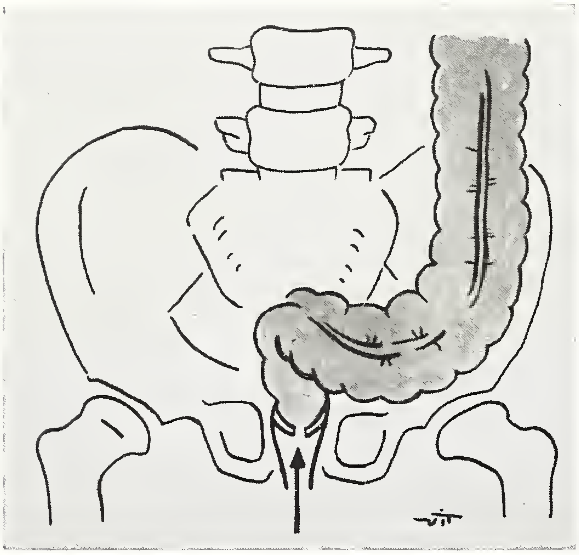


Fig. 6 Ladd and Gross, Type 1, anorectal malformation.

Symptoms are proportional to the degree of narrowing. Variations from obstinate constipation to fecal impaction with colonic dilatation simulating Hirschsprung's disease have been described. Fissure in ano frequently complicates the syndrome. Daily dilatations are usually curative.

The incidence of the condition is uncertain. Liburt discovered 22 cases in three years, the most frequent entity occurring in his series of 66 anorectal lesions. He postulated that the disease would be more widely recognized if mothers did not defer medical consultation in the belief that ". . . most infants cry, have colic, and are more or less troubled with constipation . . ." and if physicians did not reserve rectal examination for obviously severe defecation problems.

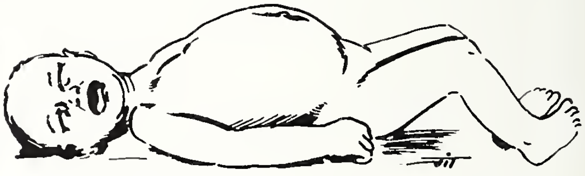


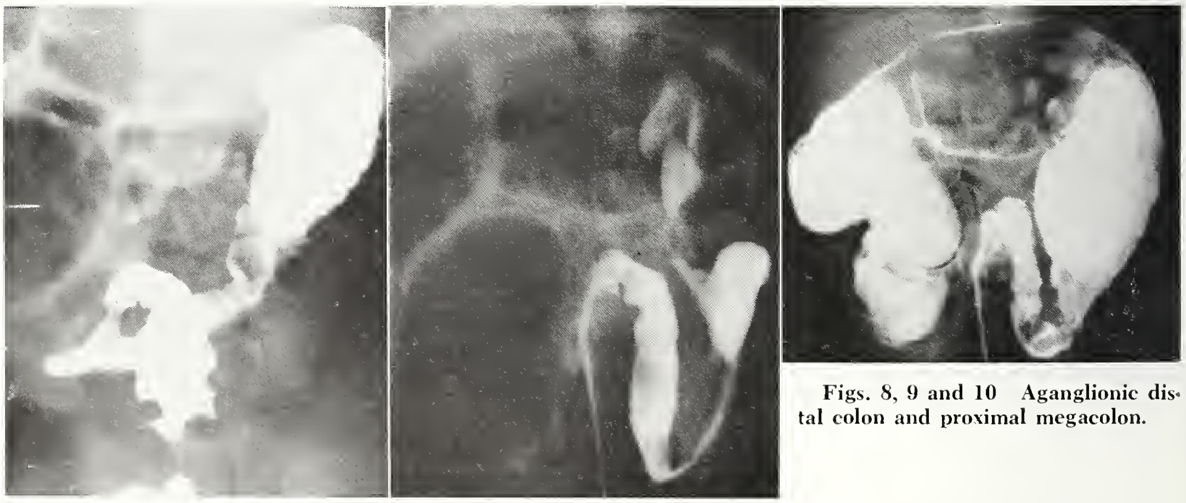
Fig. 7 Visual evidence of aganglionic megacolon.

Case: Aganglionic Megacolon

The third patient referred for radiologic investigation was a three month old white male. He had been persistently and severely constipated since birth, had vomited intermittently and failed to gain weight. Physical examination revealed marked growth retardation, debilitation, fever and protuberant abdomen with palpably distended bowel (Fig. 7). Pyrexia and vomiting subsided during the one week period required to cleanse the bowel in preparation for intestinal and urographic survey.

Barium enema studies demonstrated a constant concentric narrowing of the inferior rectum (Fig. 8). A second constriction extended from the rectosigmoid junction to the mid-descending colon (Fig. 9). Proximal to this level, the bowel was enormously dilated (Fig. 10). These findings were typically consistent with the provisional diagnosis of Hirschsprung's disease and additionally suggested multiple aganglionic areas (Fig. 11).

Subsequent review of the patient's birth records indicated that he had been previously examined on the third day of life because of abdominal distention, vomiting and a birth weight below the third percentile of normal. The fluoroscopist had experienced considerable difficultly in introducing the enema fluid. Abundant, inspissated meconium had com-



Figs. 8, 9 and 10 Aganglionic distal colon and proximal megacolon.

pletely plugged two consecutive catheters and partially occluded a third. Filling defects characteristic of meconium stool were diffusely distributed throughout the distal descending and rectosigmoid colon. These tended to not only obscure the lower rectal narrowing but also to deprecate the significance of the distinct although limited dilatation of the proximal colonic loops (Fig. 12). Comparison with the second conclusive film study showed that during the succeeding three months, these segments had increased markedly in size.

Multiple bowel wall biopsies obtained during the performance of a descending loop colostomy confirmed the roentgen impression of aganglionosis of the distal colon.

Discussion

A specialized examination incorporating the Newhauser technique is prescribed for the precise demonstration of aganglionosis.[3] A barium-saline solution is introduced slowly through a small catheter within the anal canal, with the patient predominantly in the left oblique or left lateral position, with constant fluoroscopic control and with frequent spot-filming. The substitution of isotonic saline for water in as small a barium enema as is practical will preclude the potentially fatal complications of water intoxication and barium impaction. Injection of air to produce a double contrast effect is helpful in outlining an elusive narrowing and in further limiting the quantity of barium administered. Inability to evacuate the enema fluid is confirmatory evidence of congenital megacolon and in very young infants may be the only sign of abnormality. The oral use of barium is obviously contraindicated.

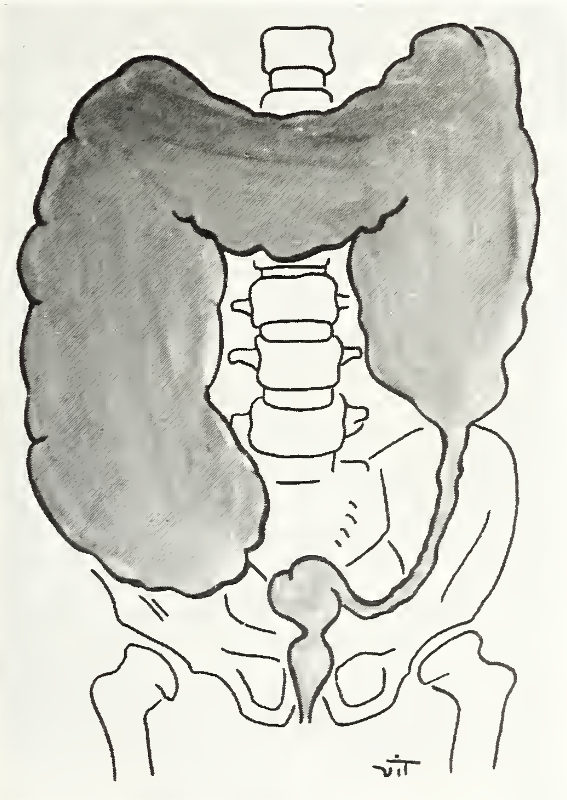


Fig. 11 Hirschsprung's disease.

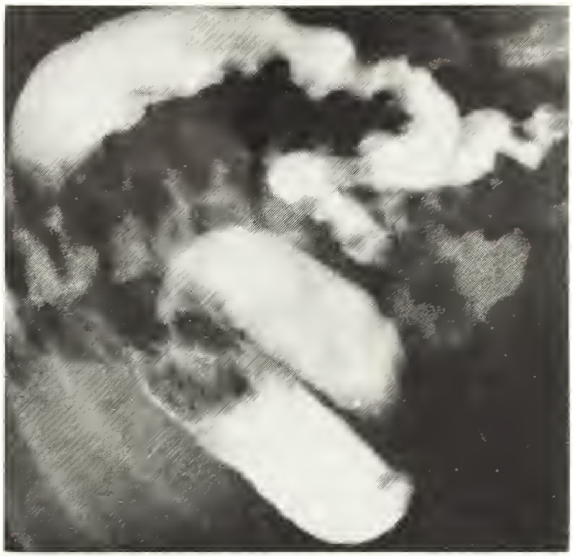


Fig. 12 Inspissated meconium complicates examination.

Rapid flooding of huge loops with barium mixture in disregard of these principles invites misinterpretation. The densely opacified megacolon may completely obscure the junction of spastic and dilated segments and moreover erroneously suggest that the dilatation is continuous to the anus. Although the zone of transition from constricted to dilated bowel is usually abrupt, the junctional loop may be funnel-shaped. This appearance is the result of enlargement of the proximal end of the aganglionated segment by long-standing increased intraluminal pressure. With minimal barium filling, the transitional zone in this case was conspicuously abrupt and the exact site of surgical interest was unmistakable. Following the introduction of additional barium suspension, the junctional site was either totally lost to view or when apparent appeared funneled and distensible.

Congenital megacolon is ordinarily assumed to be a disease of the terminal intestine and, in 90% of cases, only the rectosigmoid is involved. The remaining minority grouping of 10% of cases consists of long segments of aganglionated bowel. Although length of involvement is not necessarily indicative of prognosis, most of the cases terminating fatally during the neonatal period were the long segmental variety. Among these types, the process in the case described is by no means extensive. Reports of cases with involvement of the entire colon are not rare. Most commonly, however, long segment involvements extend from the splenic flexure to the anus. Loops of ileum have been involved in some cases; a patient with aganglia of the entire intestinal tract distal to the duodenojejunal junction has been described. These latter small bowel syndromes are considered variants, in that megacolon is absent.

A distinct annular constriction is frequently considered the classic roentgen manifestation of aganglionosis. When the process is confined to the rectum, this feature is common. Particularly in the uncommon instance of long segmental involvement, recognition of the critical significance of a difference in bowel caliber—rather than discrete narrowing—is essential. Actually, luminal narrowing is not invariably correlative with the length of the malfunctioning loop. Thus, the aganglionic segment may appear entirely normal and only proportionately narrow when compared with proximal dilated bowel. In other cases, the constricted area may comprise a relatively small part, a substantial portion or even the total aganglionic segment.

Dilatation of the proximal colon in Case 3 was not pronounced on the third day of life; subsequent studies revealed frank megacolon. This delay in the development of dilatation is to be anticipated. In the neonatal period, constricted loops and/or inability to evacuate the enema constitute cardinal diagnostic findings.[4]

A few cases of congenital megacolon have been reported in which ganglion cells were present distal as well as proximal to the narrowed segment.[5] These have been classified as cases of single zonal aganglia. Basically, they differ only in that involvement is not continuous to the anus.

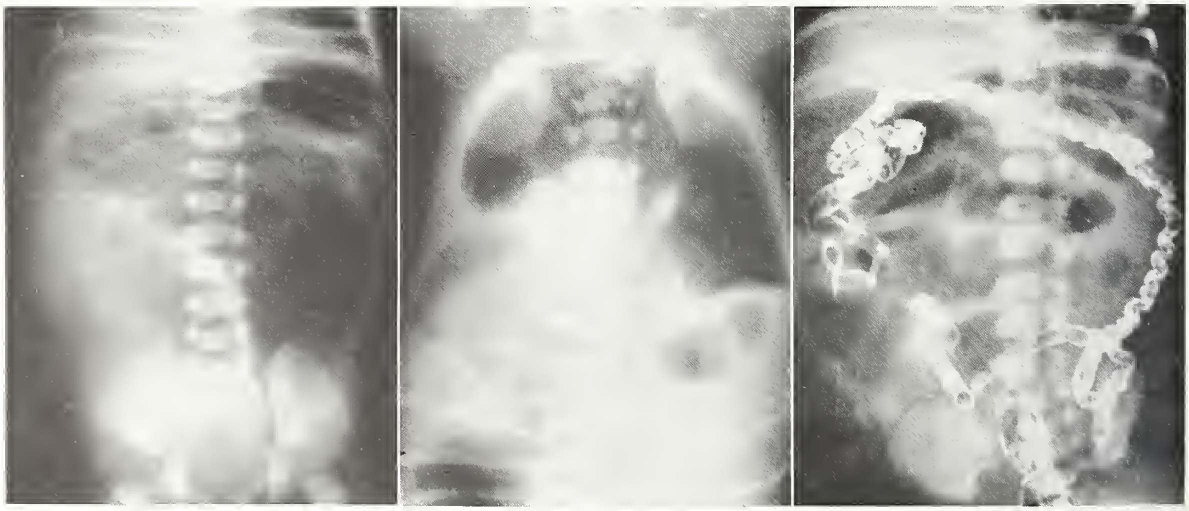
A unique idiosyncrasy of aganglionosis exemplified by Case 3 is the presence of double zonal aganglia. In 1954, Keefer and Mokrohisky described a case with two distinct zones of aganglia.[5] One of these was in the sigmoid colon and one in the lower rectum. The upper rectum separating the aganglionated segments possessed normal myenteric plexuses and normal caliber. Only the ganglionated bowel above the proximal constriction was dilated in this case and in Case 3. This bizarre feature further emphasizes the diversity of forms assumed by this curious neuromuscular syndrome.

Meconium Ileus: Differential Diagnosis

Although the following case was not examined during the same brief interval as the three infants described above and although the disease process is not primarily a colonic disorder, a description of the findings of this recent patient with proved meconium ileus is appropriate from a differential diagnostic viewpoint.

Persistent colonic distention in the neonatal period may be considered pathognomonic of Hirschsprung's disease if the easily diagnosed but statistically unlikely entity, anorectal stenosis, can be eliminated. Thus, the differentiation of distended colon from distended small intestine is crucial. This differentiation may be most difficult or even impossible in recumbent films.

Comparison of abdominal films in recumbency with those in inversion may reliably indicate the true site of obstruction by virtue of the dif-



Figs. 13, 14 and 15 Mega-ileum and micro-colon.

fering characteristics of the pattern of the two types of bowel in these positions (Figs. 13 and 14). Distribution of loops is particularly revealing.[6]

In this case, such films exposed 24 hours after birth definitely indicated that the dilatation was ileal because the abnormal loop extended to the pelvic floor in inversion. Note that in the recumbent film the dilated loop simulated in many respects the dilated transverse and descending colon of the case of Hirschsprung's disease.

In the erect position the dilated small bowel loops were not accompanied by fluid levels. Absence of air-fluid levels in mucoviscidosis has been attributed to mechanical interference with mucosal secretion by mucilaginous meconium.[7]

A subsequent barium enema revealed a microcolon: diminutive and collapsed or deactivated bowel (Fig. 15). Multiple loops of ileum of normal diameter containing homogeneously dense meconium were recognized as well as an enormous segment with characteristic pebbly or mottled shadows representing air trapped in viscid meconium (Fig. 16).

No definite roentgen means is known by which meconium ileus can be distinguished from the rare occurrence of aganglionosis of the entire bowel. Rectal biopsy for diagnostic enigmas of this nature was first advocated by Swenson in 1955.[8, 9]

Hypaque solution may prove advantageous as the opaque enema agent in such cases inasmuch as this water soluble medium "will not interfere with immediate surgical exploration and will not cause fecal impaction."[10]

Finally, the meconium plug syndrome may radiographically simulate aganglionic megacolon; both conditions may be present simultaneously. An opaque enema study will not only locate an intracolonic obstructing plug, it frequently results in its expulsion.

Summary

A résumé of clinical and roentgenologic diagnostic features of four unrelated, congenital causes of colon obstruction in the newborn is presented. The syndromes discussed are: imperforate anus, anorectal stenosis, aganglionic megacolon and meconium ileus.

Pertinent roentgen maneuvers are summarized and correlated with fundamental pathological findings.

To encounter three such syndromes in less than a one month interval is distinctly unique. Nevertheless, re-emphasis of diagnostic criteria significant in this vulnerable age group is warranted.

Delayed or faulty diagnosis render correct management improbable and constitutes a major contributing factor to infant mortality in congenital intestinal obstruction.

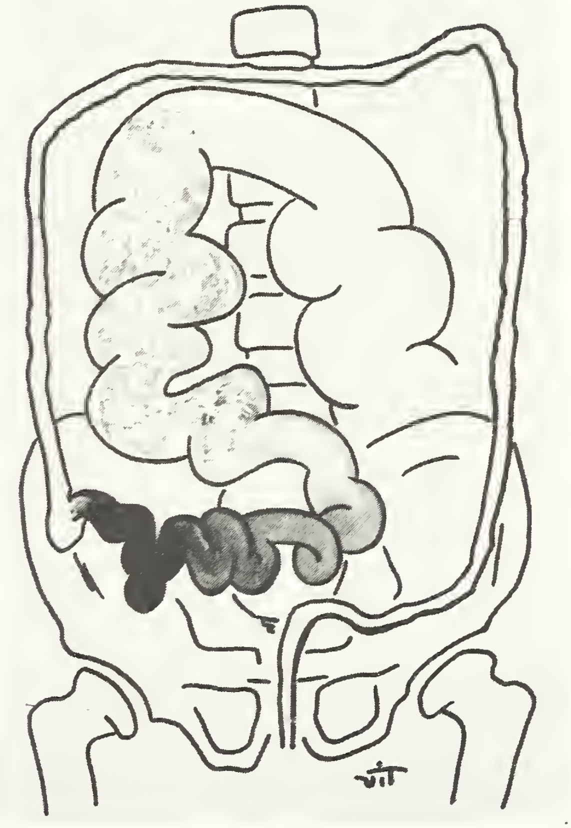


Fig. 16 Meconium ileus.

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ROBERT L. GLASS, M.D., ***Sedalia***

Skin Cancer—Principles of Management

BASAL CELL AND EPIDERMOID CARCINOMA of the skin usually arises on the head and neck or exposed portions of the upper extremities, infrequently on the legs and rarely elsewhere.[2] Basal cell carcinomas seldom cause the death of the patient because of their slow growth and tendency to remain localized but those that are treated inadequately can result in significant disability (Table 1).[5] Ten to 20% of epidermoid carcinomas metastasize, and about the same number are fatal, often from uncontrolled local persistence rather than from metastases.[2, 6, 7, 8, 9] By following certain principles of management, it should be possible to control 95% by treatment.

TABLE 1

PROGNOSIS OF BASAL CELL CA*

Total Cases	*2900*
Recurrences (%)	101 (3.4%)
Recurrences Controlled (%)	97 (98.0%)
Overall Control (%)	2896 (99.9%)

* Lauritzen, et al.

GENERAL PRINCIPLES OF TREATMENT

Adequate surgery and radiotherapy are about equally effective for controlling most skin cancers. For surgery to equal radiotherapy in effectiveness, a one cm. margin must be removed beyond the gross tumor to remove microscopic extensions.[1] In certain areas like eyelid, nose and upper lip, this margin of resection would result in significant cosmetic and functional disability, and radiotherapy is the treatment of choice, giving a superior cosmetic result. If cartilage or bone invasion is present, radical surgery gives definitely better cure rates than radiotherapy. Also, those lesions arising in draining sinuses and scars generally do poorly with radiotherapy and should be widely excised. In addition surgery is preferable for the cancer arising in an area of extensive premalignant keratoses. A wide excision of the cancer and the keratotic skin with skin grafting of the defect will treat the lesion and prevent future malignancies in the area. The use of pedicle flaps or the undermining of skin for closure is not recommended because local recurrences in these areas are often far advanced when detected and difficult to treat. The use of split thickness skin grafts is the preferred method for covering large defects, except where the exposure of vital structures necessitates the use of a pedicle for primary coverage. Generally, pedicle reconstruction for the purpose of the cosmetics should be delayed or kept to a minimum until control of the primary cancer is certain.

POTENTIALLY LETHAL EPIDERMOID CARCINOMA: DETECTION AND MANAGEMENT

The cutaneous epidermoid carcinoma which ultimately cause the death of the patient are invariably larger than 2 cm. when first treated.[4, 5, 7, 8, 9] All lesions of this size or larger should be biopsied before treatment. The larger basal cell cancers are treated as outlined above but the larger epidermoid cancers should be treated even more aggressively. They should be closely followed (Table 2) for recurrence and regional metastases. Regional metastases are controllable when detected in time.[3, 7, 9] Distant metastases are uncommon.

TABLE 2

PATTERN OF RECURRENCE OF SKIN CANCER AT EFSCH

	(Yrs. After Original Treatment)					
	0-1	1-2	2-3	3-5	5-8	TOTAL CASES
Basal Cell	33	25	16	13	7	94
Epidermoid*	14	3	1	0	0	18

* Incomplete data, in general agreement with other studies.

The other warning sign of lethality is the so called "inadequate excision." All excised lesions should be examined by the pathologist in such a way as to determine adequacy of excision as shown in Fig. 1. The microscopic diagnosis "inadequate excision" of an epidermoid cancer after a grossly adequate resection is an indication for immediate re-treatment. If treatment is delayed until clinical recurrence is evident a 25% mortality can be expected.[4]

CLINICAL FOLLOW-UP OF PATIENTS AFTER TREATMENT

The data in Table 2 show frequency at which recurrences and lymph nodal metastases occurred among EFSCH cases. The follow-up schedule (Table 3) is based on these data and is followed at the EFSCH. The risk period for the recurrence of epidermoid cancers is three years, that for basal cell cancers eight to ten years.[3, 4, 5] After the risk period for a given cancer, once a year follow-up for life is recommended because of the 50% likelihood of developing another primary skin cancer.[4, 7] In following epidermoid carcinomas, one must not hesitate to biopsy minimally suspicious lesions. The mortality of recurrent epidermoid carcinoma is approximately 50%,[4] but is distinctly better with early treatment. The prognosis of recurrent basal cell carcinomas is quite good, and one can be somewhat less aggressive about repeated biopsies.

TABLE 3

ROUTINE FOLLOW-UP SCHEDULE FOR SKIN CANCER, EFSCH

	Months After Treatment
Basal Cell CA	3-12-24-36—every 12 months of life
Epidermoid CA	1-2-3-4-5-6-8-10-12-15-18-24-30-36—every 12 months for life

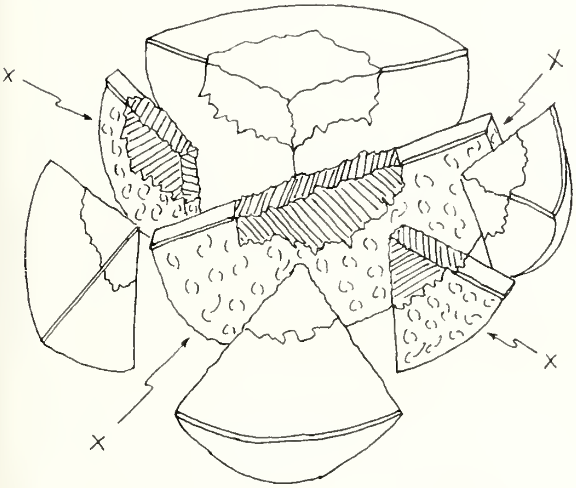

Fig. 1 Technique of sectioning. X's indicate margins to be examined for tumor infiltration.

A review of the material at Ellis Fischel State Cancer Hospital and in pertinent literature leads to the formulation of certain principles for the treatment of epidermoid and basal cell carcinomas of the skin. Lesions which have a significant lethal potential can be predicted at the time of initial treatment, and often can be controlled. Doctor Glass is an attending Surgeon at Ellis Fischel Hospital and in the private practice of surgery in Sedalia.

SUMMARY

Basal cell and epidermoid carcinomas of the skin are usually curable lesions. From a review of the material at Ellis Fischel State Cancer Hospital and in pertinent literature, certain principles of treatment of such carcinomas have been formulated. Those lesions which have a significant lethal potential can be predicted at the time of initial treatment and handled more aggressively. Local recurrences and regional metastases often can be controlled if detected in time. For this reason, close follow-up is indicated during the "risk period."

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GERARD VAN LEEUWEN, M.D., ***Columbia***

Recognition and Management of Respiratory Distress in the Newborn

(Hyaline Membrane Disease)

The Respiratory Distress Syndrome (RDS) of the premature infant accounts for at least 30,000 deaths in the United States each year. Even with the most prompt recognition and excellent management, 25% to 50% of all infants who develop the syndrome die. Because the syndrome is so prevalent, it is believed important to review the recognition and management of the problem. There are numerous theories today, some of which have been partially confirmed, regarding etiology and various means of prevention and therapy. These will not be stressed in this presentation.

Physiology

For the clinician who has not recently reviewed neonatal pulmonary physiology, a brief résumé of the probable mechanism of onset of respiration is presented. It has been shown that while *in utero,* the fetus makes feeble respiratory movements. These are either spontaneous or may be produced by tactile stimuli or fetal anoxia. In spite of the aforementioned factors, the respiratory system of the fetus is inhibited by some unknown factor or factors. With loss of the controlled environment at birth the infant is subject to tactile stimuli, is deprived of his oxygen supply, is subjected to an increase of carbon dioxide, and is probably in a state of fear or anxiety. The promptness with which the fetus spontaneously breathes is said to arise primarily from the enormous sensory input at birth. In the event that this stimulus does not accomplish the intended effect, then the accumulation of carbon dioxide takes a prominent part in directly stimulating the respiratory center of the medulla. Oxygen lack does not appear to be as important as hypercarbnea, since low oxygen concentration only stimulates the medulla indirectly from the aortic and carotid chemoreceptors. The part played by emotional factors remains obscure.

The infant is required to supply a force which will overcome about 25 mm of Hg. pressure tending to keep the alveoli collapsed. This is primarily the result of the surface tension. The normal unanesthesized infant is capable of supplying almost twice this amount.

Incidence and Etiology

One can anticipate that 15% of all infants weighing less than 2000 gm. at birth will develop RDS. Of those who develop RDS, between 25% to 50% will die with conservative management.[1, 2] It is well known that premature infants and infants born of diabetic mothers are especially susceptible to RDS. Infants born by caesarean section are more susceptible, probably as a result of the indication for the procedure rather than the procedure itself.[3]

The etiology of RDS continues to elude investigators. There is extensive support to the observation that the basic pathophysiology begins with pulmonary hypoxia, which many investigators believe begins *in utero.* Many observations have developed and these may be grouped rather broadly into two general divisions, primary pulmonary and circulatory. A

This presentation is intended to condense the available knowledge and to present practical methods of recognition and treatment of the Respiratory Distress Syndrome of premature infants. A plan for prompt recognition of respiratory distress depending on tachypnea, cyanosis and expiratory grunt is discussed. The importance of supportive therapy with respect to warm environment, oxygen and intravenous fluids is emphasized. Doctor Van Leeuwen is Assistant Professor of Pediatrics and Advanced Trainee in Newborn Physiology at the University of Missouri Medical Center.

variety of biochemical changes have been demonstrated in the lungs of animals and/or premature infants: absence of an alveolar lining lipoprotein which is present in normal lungs;[4] deficient plasminogen activator;[5] and plasminogen activator inhibitor.[6] Observations on the lungs have resulted in two general approaches to therapy; hyperbaric oxygen chambers to overcome the resistance,[7] and intravenous or aerosol administration of enzymes.[8] Hyperbaric oxygen has not reduced mortality as had been anticipated. Administration of enzymes has reduced mortality.[8] This study awaits confirmation.

Two concepts of circulatory changes are prominent. Reversed flow through the patent ductus arteriosus results in pulmonary pressure increase and extravasation of plasma or portions thereof. There is often left ventricular dilatation and evidence of congestive heart failure at autopsy.[9] Abnormality of blood volume in the immediate neonatal period is presently undergoing extensive investigation.[10] Premature infants may be deprived of adequate blood volume, which results in a low colloidal osmotic pressure and effusion of plasma contents into the alveoli. Blood volumes have not been extensively determined, although many attempts at therapy which have proven successful have directly or indirectly increased the blood volume.[11, 12, 13, 14]

It is quite possible that there is a reduction in pulmonary volume rather than systemic blood volume. The similarity of the alveolar contents and the hyaline membrane to plasma would seem to support the view that circulatory changes play a major role in etiology. The syndrome may be a result of both pulmonary and circulatory deficiencies, as well as yet unknown factors.

RECOGNITION

Every infant born in the University of Missouri Medical Center receives a congenital anomaly appraisal within the first 30 minutes of life. This consists of five major points: information about the presence of polyhydramnios, observation of abdomen, insertion of a rectal catheter, passing a naso-gastric tube, aspiration of stomach contents, and examination of umbilical stump (Table 1). By these maneuvers a large number of congenital anomalies are readily excluded.

After the birth of a premature infant, caesarean section, or infant of a diabetic mother,[15] vital signs are obtained every 20 minutes for two hours, then at least hourly until stable. We have devised a method of observation which makes it highly unlikely to fail to recognize respiratory distress within 60 minutes of onset. Nearly all infants who develop RDS do so during the first six hours.

TABLE 1

CONGENITAL ANOMALY APPRAISAL

Procedure	*Anomalies Considered*
1. Polyhydramnios	a. GI Obstruction b. G-U Obstruction
2. Observe Abdomen	a. Concavity suggests Diaphragmatic Hernia b. Distention suggests Tumor
3. Rectal Catheter	Imperforate Anus
4. Naso-gastric tube	a. Choanal Atresia b. Nasopharnyx Anomalies c. Esophageal Atresia
5. Aspirate Stomach	a. Greater than 20 ml. fluid suggests obstruction b. If bile-stained is almost pathognomonic
6. Umbilical Stump	One artery suggests Renal Anomaly

A slight modification of Miller's Criteria is used.[16] These criteria can be readily recognized: (1) respiratory rate greater than 65/min. on more than one occasion after the first hour of life, (2) expiratory grunt and (3) cyanosis. Any infant who has any two of the above three criteria is tentatively diagnosed as having respiratory distress. This admittedly will result in over-diagnosis of this syndrome. Since current therapy is primarily aimed at correction of physiological imbalances, we do not believe that over-diagnosis in any way endangers the infant. Hoarseness, cough, and complaining cry are other common symptoms. The frequency of the signs and symptoms is listed in Table 2.

MANAGEMENT

As long as respiratory distress has not developed, manipulation of the infant should be avoided. The importance of simple observation cannot be over-emphasized.

Once the infant is considered to have respiratory distress on the basis of the above criteria, specific diagnosic procedures and therapy are immediately instituted.

1. **Chest X-ray**—Physical examination, even though it should be carried out, cannot ex-

TABLE 2

SIGNS AND SYMPTOMS OF THE RESPIRATORY DISTRESS SYNDROME

Onset of distress 0-6 hrs.	81%
Duration 0-72 hrs.	90%
Symptoms	
Retraction &/or Expiratory Grunt	90%
Hoarseness & Cough	90%
Complaining Cry	89%
Cyanosis	55%
Respiratory Rate 65/min. or greater	50%

clude either medical conditions amenable to specific therapy or abnormalities requiring prompt surgical attention. Anomalies and disorders which will require prompt surgical attention such as tracheo-esophageal fistula, diaphragmatic hernia, tension pneumothorax, lobar emphysema and cysts are readily recognized. Pneumonitis and amnionitis are more difficult to recognize, but in the majority of instances can be diagnosed. The exclusion of the above conditions thus becomes a vital aspect of management. If the diffuse reticulo-granular appearance of the RDS is present it is helpful, although we do not consider it essential for instituting supportive therapy.

2. **Environmental**—All of the infants under discussion are placed in isolettes for observation at birth, irrespective of whether or not they have RDS. The isolettes are kept at a temperature to maintain the infant's body temperature between 97-98 degrees. If normothermia cannot be maintained in this manner, the baby is covered with dark clothing or foil to prevent radiation. Moderate humidity (40-60%) is provided, there being no good evidence that a higher humidity is beneficial. The infants breathe most comfortably in a supine position with the cephalad portion elevated and additional material placed under the shoulders to extend the neck. It has been shown that this increases vital capacity by removing the abdominal contents from under the diaphragm and thus allowing greater excursions.
3. **Specific measures**—On an investigative basis we are presently measuring blood volume and serum proteins immediately after birth. Our data are not yet sufficient to warrant any conclusions, so we do not believe attempts should be made to increase blood volume by extraordinary means with our present knowledge. We do recommend delayed clamping and stripping of the umbilical cord. As soon as the infant develops respiratory distress and a chest X-ray has been made, a venous pH and electrolytes are obtained. Intravenous therapy is then instituted according to Usher's technique (Table 3). Serial measurements of pH and electrolytes are obtained. Antibiotics are not given for the first 48 hours, unless infection is a known factor. After 48 hours, we believe the danger of pneumonia becomes great. Oxygen is given in sufficient concentration to prevent cyanosis. The fear of producing retrolental fibroplasia must be temporarily minimized during this critical period which does not usually exceed 72 hours. During periods of high oxygen concentration, the concentration should be decreased to 40% for five to ten minutes an hour to allow any retinal arteriole spasm to subside. Oxygen concentration must also be reduced frequently to ascertain whether high concentrations are still required. Infants with severe distress are digitalized with digoxin (lanoxin) 0.03 mg./lb., over a 24 hour period. One half the digitalizing dose is given intramuscularly, one fourth 12 hours later, and the remainder 12 hours after the second dose. Maintenance digoxin (usually 25% of the total digitalizing dose) is started after 24 hours if the infant's condition remains critical.

TABLE 3

USHER TECHNIQUE FOR MAINTAINING ELECTROLYTE BALANCE IN THE RESPIRATORY DISTRESS SYNDROME.

Venous pH	*60 Ml./kgm. 10% G/W plus*
7.3	
7.2 - 7.3	$NaHCO_3$ 5 meq/100 ml.
7.1 - 7.2	$NaHCO_3$ 10 meq/100 ml.
7.0 - 7.1	$NaHCO_3$ 15 meq/100 ml.
7.0	$NaHCO_3$ 25 meq/100 ml.

4. **Other measures**—We do not believe that other methods of prevention and therapy such as phlebotomy, aerosol and intravenous enzymes,blood transfusion, intravenous albumin, estrogens, magnesium sulfate ene-

mas, etc., should be used except under controlled conditions where their effectiveness can be properly evaluated. The disease usually runs its course in 72 hours. At UMMC the mortality rate during 1963 for RDS was 25%, if we exclude the group of infants whose distress was transient. The decreased mortality reported in recent years may well be due to improved supportive care, and particularly to improved oxygen therapy.

SUMMARY

A brief discussion of the etiology of respiratory distress of the newborn is presented. Recognition depends on observation of vital signs and chest X-ray. Therapy generally acceptable consists of: warm, moderately humid environment; comfortable position; oxygen to prevent cyanosis; intravenous electrolyte fluids; digitalization; and antibiotics when indicated. Mortality approximates 25% with conservative management, but has been reduced to 15% under ideal situations.

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Without the Salk Vaccine which came into use in 1955, and the Sabin Vaccine in 1961, some 35,000 American children and adults might have been stricken by poliomyelitis last year, the Health Insurance Institute says. As it turned out, 1964 marked the lowest point ever in polio incidence in the United States—only 121 reported cases. The year before that, 449 cases. Moreover, there was no seasonal rise or noticeable "outbreak" in 1964. The year before there were eight outbreaks of paralytic polio. And the majority of cases in these outbreaks were among unvaccinated persons. The Institute, reporting on its analysis of U. S. Public Health Service data, said that this infectious disease which often cripples or kills (8,822 deaths from 1952 through 1961), may be nearing the vanishing point in this country.

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Reverse Rotation of the Mid-Gut in the Adult

Case Report

Reverse rotation of the mid-gut is the least common of the rotational anomalies. Because of its rarity, no standard method of management has been developed in the surgical literature or textbooks. The accompanying paper consists of a case report of reverse rotation presenting as an acute volvulus of the right colon in an adult, with review of advocated methods of management and presentation of a new method of surgical management. Doctor Casebolt, D.A.B., F.A.C.S., is from the Department of Surgery, Baptist Memorial Hospital.

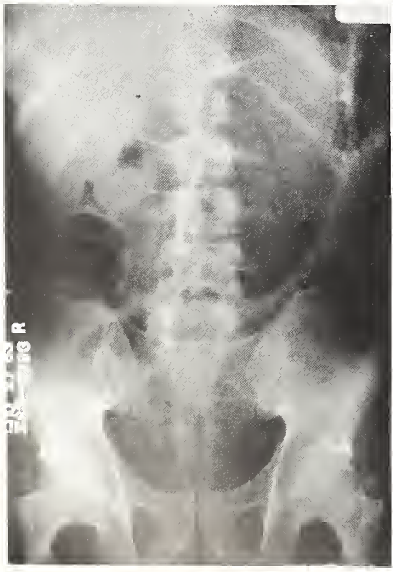
CASE REPORT

A 24-year-old male was admitted to Baptist Memorial Hospital with abdominal pain of nine hours' duration. The patient experienced excellent general health until the onset of epigastric pain which progressively increased in severity with nausea and vomiting ensuing.

Examination revealed a healthy appearing young man in severe acute distress. There was localized distention with exquisite tenderness and marked guard well localized to the left upper quadrant. Bowel sounds were absent to auscultation. Rectal examination revealed an empty ampulla.

Admission laboratory studies revealed a white count of 11,000 with a slight shift to the left on differential. X-ray studies included an upright chest X-ray (for free air) which was not unusual. A flat plate of the abdomen revealed an unusual gas pattern suggestive of volvulus of the colon (Fig. 1). A barium enema revealed normal bowel up to mid-transverse colon beyond which the barium would not pass (Figs. 2 and 3). With a preoperative diagnosis of volvulus of the right colon, an emergency laparotomy was promptly undertaken.

At surgery, the right colon volvulus was visualized (Fig. 4A). Upon examining the mesocolon of the cecum, a clockwise twist was appreciated. Detorsion was accomplished by rotating the right colon 360 degrees counterclockwise (Fig. 4B). Following detorsion it became evident that the underlying anatomic defect was reversed rotation of the mid-gut with the jejunum and superior mesenteric artery passing anteriorly to the transverse colon. Inspection of the mesentery revealed a mesenteric tunnel through which the transverse colon passed. This colonic tunnel was sufficiently large so as to avoid transverse



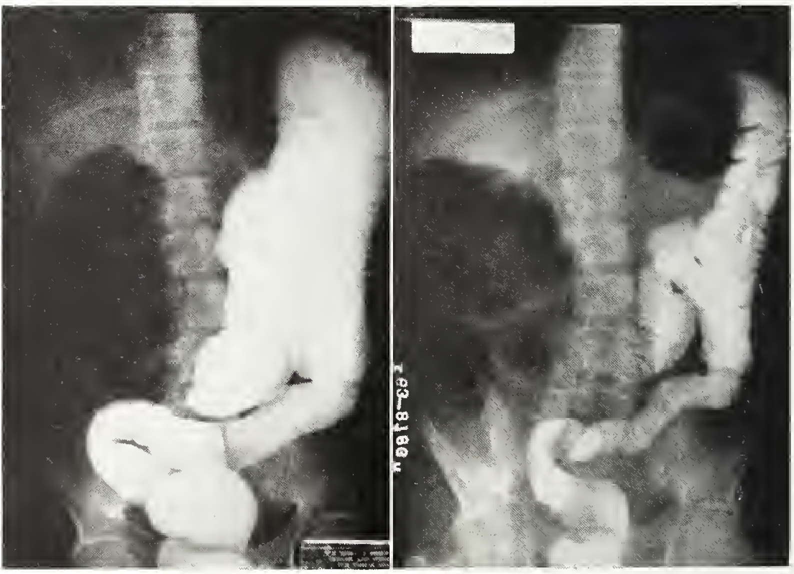


Fig. 1 Flat plate of abdomen revealing cecal volvulus.

Figs. 2 and 3 Barium enema demonstrating obstruction at mid-transverse colon level.

colon obstruction. The right colon was diminutive in length, with a minimally developed hepatic flexure, and had no posterior mesocolonic or colonic fixation.

Retraction of the small intestine cephalad revealed a diminutive posterior small intestinal mesenteric fixation. By division of this avascular posterior mesenteric fixation up to the mesenteric colonic tunnel, the transverse colon could be liberated from its tunnel entrapment (Fig. 4C). In essence, this maneuver was comparable to mobilization of the posterior mesenteric attachments as done for exposure of the abdominal aorta. The mobilization was performed with care as the inferior mesenteric vein was immediately to the patient's left and the superior mesenteric artery to the right (Fig. 4C insert). The ultimate placement of the mid-gut is shown in Fig. 4D, and is essentially that of the non-rotated position. An appendectomy was performed, and the

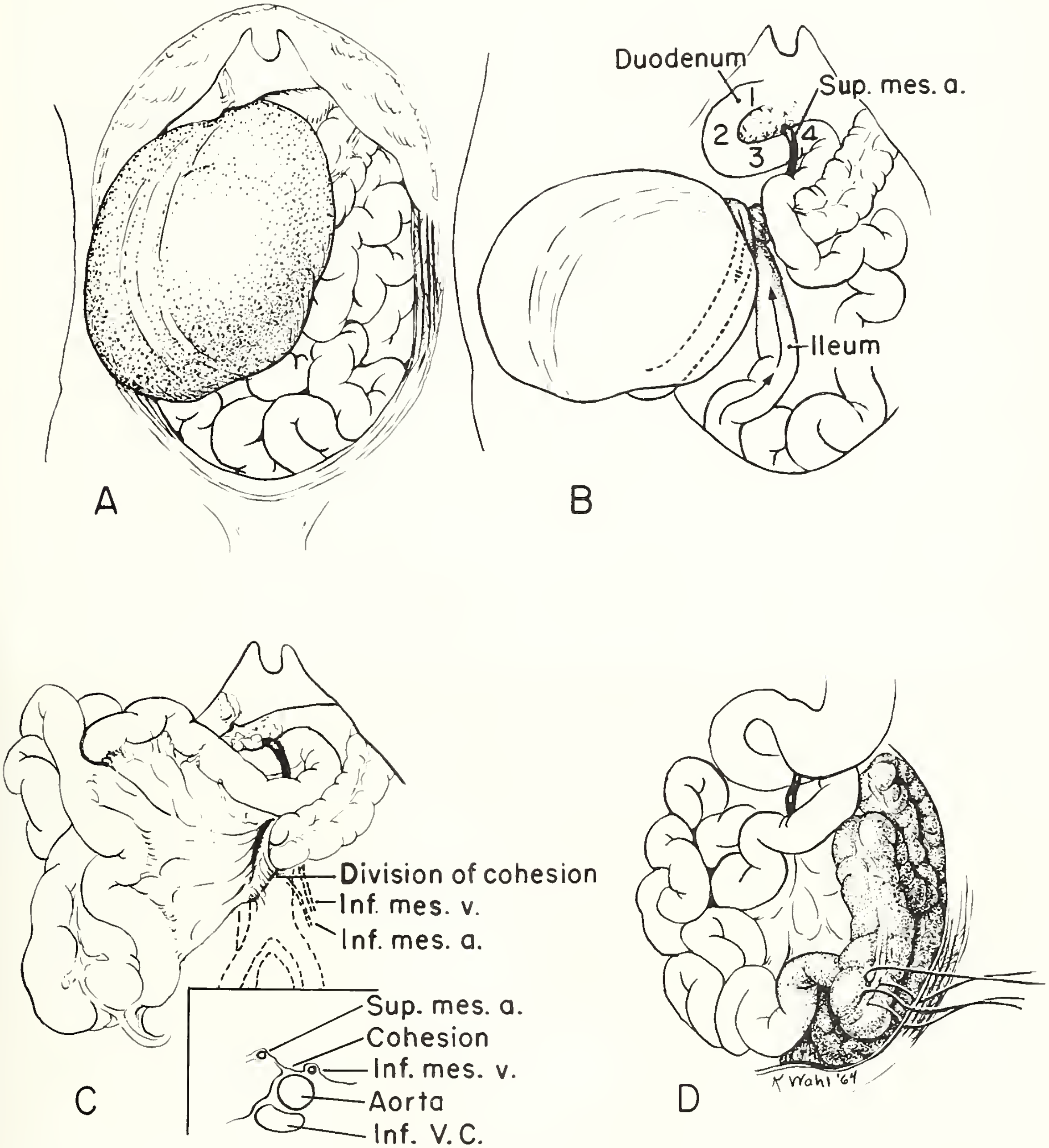


Fig. 4 (a) Initial appearance of cecal volvulus. (b) Cecal volvulus being detorsed (small intestine schematically shortened for clarity). (c) Rudimentary diminutive posterior mesenteric fixation before mobilization. (Insert) revealing proximity of superior mesenteric artery and inferior mesenteric vein to plane of dissection. (d) Final disposition of viscera in the position of non-rotation. Note cecopexy performed.

cecum was fixed in the left lower quadrant by suturing to prevent recurrence of the volvulus and to maintain the position of non-rotation. It was interesting to note that all of the retro-peritoneal structures on the right side of the abdomen including the vena cava, the testicular vessels and ureter, were clearly visible through a peritonealized covering of the retro-peritoneal area. The duodenum had the usual four portions including a rudimentary ligament of Treitz at the duodenal-jejunal junction. The abdomen was closed without drainage.

The patient's postoperative course was eventful. An ileus required intensive therapy including naso-gastric tube, decompression, intravenous fluids and electrolytes and parasympathomimetic drugs for the first six days postoperatively. On the sixth postoperative day hypaque was administered by naso-gastric tube and followed through the intestinal tract with serial X-rays to rule out intestinal obstruction. On the eighth postoperative day naso-gastric decompression could be eliminated. On the ninth postoperative day a liquid diet was tolerated. The patient was dismissed on the twelfth postoperative day. Post-dismissal follow-up revealed the patient to be asymptomatic.

EMBRYOLOGY OF INTESTINAL ROTATION

In four weeks of embryologic development the primitive alimentary tract, which is a straight hollow tube, differentiates into three portions according to blood supply: the fore-gut supplied by the celiac artery, the mid-gut supplied by the superior mesenteric artery, and the hind-gut with its inferior mesenteric supply.

During the fifth week the mid-gut grows more rapidly than the fore-gut and hind-gut; and, with the developing liver diminishing available space, the mid-gut herniates physiologically through the root of the umbilical cord. This herniated mid-gut loop lies in the sagittal plane, and at its apex is the remnant of the vitelline duct and the termination of the superior mesenteric artery. The cephalad portion is termed the "pre-arterial segment." The caudad portion, with developing cecal bud, is designated the "post-arterial segment." The mesentery at the umbilical ring remains narrow relative to the broader mesentery of the herniated loop, and is termed the "duodeno-colic isthmus."

The process of intestinal rotation has been divided into three stages: (Fig. 5)

First Stage. The herniated mid-gut rotates 90 degrees counterclockwise on the axis of the superior mesenteric artery so the pre-arterial segment lies to the right and the post-arterial segment to the left with both segements now occupying a horizontal plane

Second Stage. The physiologic hernia reduces

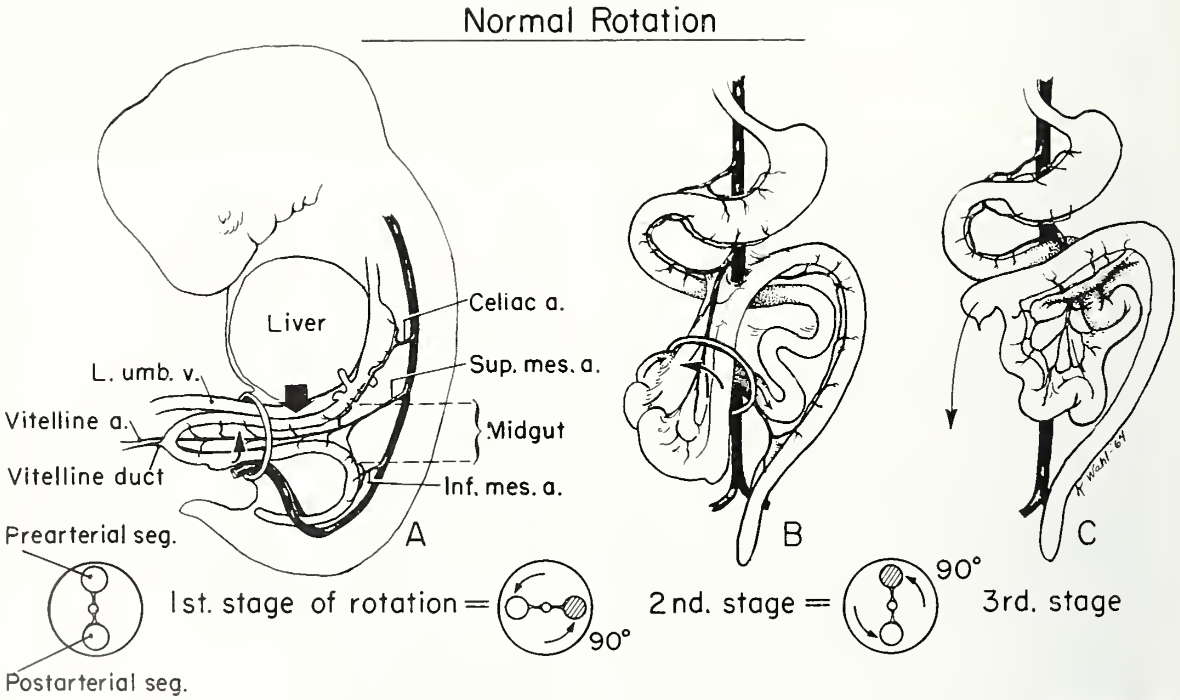


Fig. 5 Schematic diagrams of the three stages of rotation of the mid-gut with resultant normal anatomical disposition of the intestinal tract. Inserts reveal the rotation of the mid-gut on the axis of the superior mesenteric artery.

itself by orderly linear re-entry into the enlarged abdominal cavity. The pre-arterial segment is said to enter first and does so posteriorly to the superior mesenteric artery. The dorsal mesentery in this process is pushed to the left along with its attached hind-gut. The splenic flexure and descending colon are thus displaced into their normal position. As a final result the cecum finds itself additionally rotated 90 degrees counterclockwise. The second stage of rotation is said to occur very rapidly and is complete by the tenth week.

Third Stage. Descent of the cecum with subsequent fixation occurs quite slowly, and, in fact, may not be complete at the time of birth or even adulthood. With complete descent of the cecum an additional 90 degrees rotation of the hid-gut occurs so that a total of 270 degrees counterclockwise rotation is responsible for the normal anatomic arrangement at birth.

Abnormal Embryology

In exomphalos, the intestine not only fails to rotate but remains protruded into the umbilical cord, in part or in full, at birth as an omphalocele.

In non-rotation, the viscera are normally disposed except that the whole colon lies in the left side of the abdomen with the cecum in the left lower quadrant usually without fixation. In this innocuous position the defect often is found in adults on routine barium enema. Because of a lack of fixation, volvulus of the right colon and/or mid-gut may occur.

In incomplete rotation, the cecum lies in the right upper quadrant with the third stage of rotation having failed to occur. Congenital bands formed as a crude attempt at fixation in this position may be responsible for duodenal obstruction at birth; or, with attendant narrow basing of the mesenteric root, mid-gut volvulus (Volvulus Neonatorum) may occur.

In reverse rotation a 90 degree clockwise rotation occurs in the first and second stages with resultant disposition of the viscera as in the presented case (Fig. 6). Posterior mesenteric cohesion results in confinement of the transverse colon to a retro-peritoneal tunnel. Obstruction may occur at this point, with cases reported at all ages, with and without strangulation. Frequently, the right colon has no posterior fixation, and often the patient presents with right colon volvulus as in the case presented.

Comment on Case Presentation

After detorsion of the volvulus of the cecum and right colon, the reverse rotational position of the mid-gut became evident. The retro-arterial (jejunal) transverse colon in its retro-peritoneal tunnel presented the next problem. As the tunnel size was not impinging upon the lumen of the transverse colon, the right colon probably could have been fixed in the right hemi-abdomen to prevent recurrence of the volvulus, with maintenance of the reverse rotational disposition of the mid-gut. With contingent future liability of the tunnel obstruction to the transverse colon, however, the tunnel was opened at its inferior angle via mobilization of the posterior small intestinal mesenteric attachment to the retroperitoneum over the aorta and vena cava (Fig. 4C). With the tunnel thus opened the transverse colon could be withdrawn from its entrapment. As the transverse mesocolon was short in this area, a left lower quadrant cecopexy was performed to maintain the new positioning of the right colon and to prevent recurrence of the retro-arterial (reverse rotational) position. In essence, the reverse rotation was converted to nonrotation (Fig. 4D). With left lower quadrant positioning of the cecum, an appendectomy was performed.

The postoperative ileus was undoubtedly related to right colon stasis secondary to the enormous distention at the time of acute volvulus, and aggravated later by a low sodium syndrome. A small amount of barium, which was retained in the colon from the preoperative barium enema and which later migrated into the right colon after detorsion of the volvulus, enhanced the value of serial postoperative flat plates with the resultant distinct impression that ineffective peristalsis in the right colon probably caused the ileus. A tube type decompression cecostomy at the time of left lower quadrant positioning of the cecum might have avoided the ileus as well as contributed to cecal fixation. However, such a procedure has its risks as well as its advantages.

Management of Reverse Rotation

In reverse rotation the right colon and its mesocolon usually have very little, if any, posterior fixation. This predisposes to volvulus of this portion of the mid-gut. The mesenteric tunnel through which the transverse colon must pass, along with a sometimes taut superior mesenteric artery, may cause compression and obstruction to the transverse colon. Abnormal adhesions in an attempt at fixation of the right colon may result in intestinal obstruction. This is often duodenal obstruction, and usually occurs at birth. Of these complications of reverse rotation, vol-

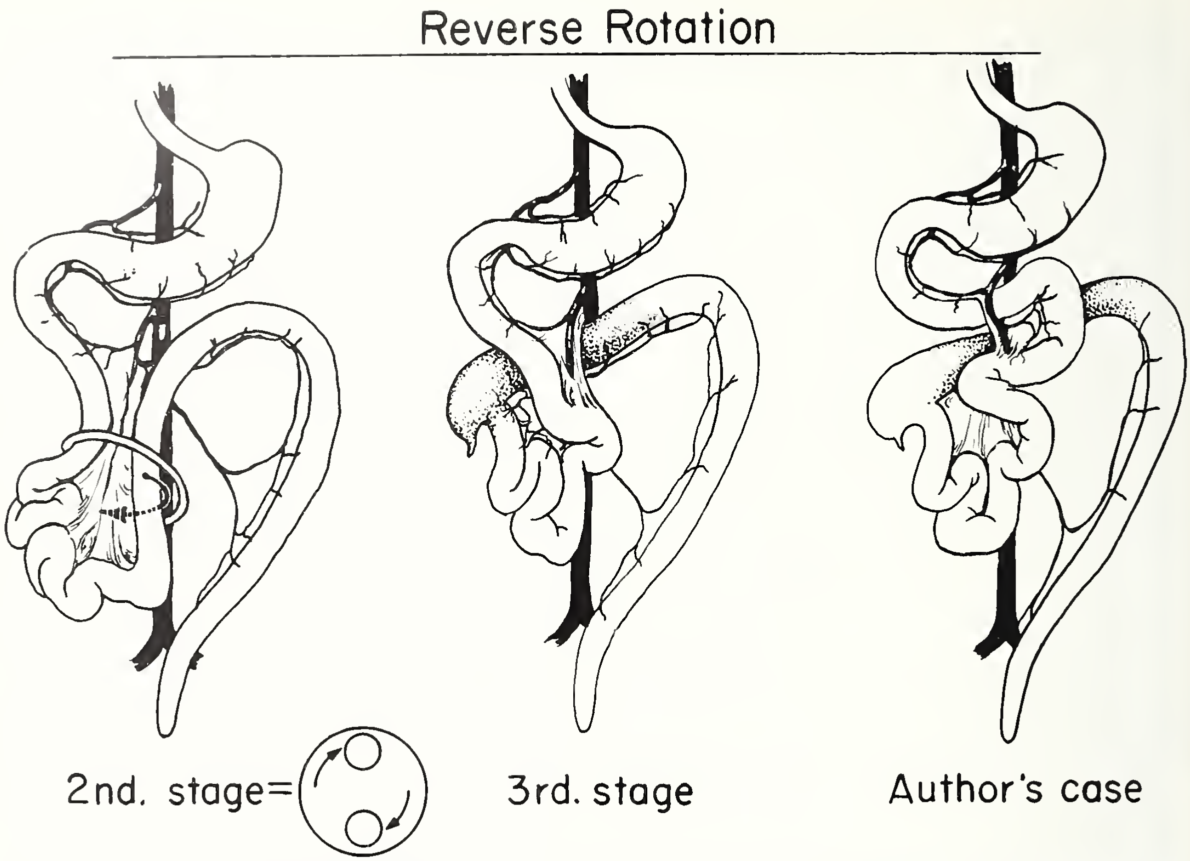


Fig. 6 Diagrammatic sketch revealing the abnormal anatomy of reverse rotation. Note the difference in the anatomical disposition of the duodenum between the author's case and the more usual form of reverse rotation.

vulus is most commonly reported and adhesive band obstruction is the least common.

With non-viability of a right colon volvulus the surgeon has little choice other than to perform a right colectomy. Estrada[1] cautions against placing the ileo-transverse colon anastomosis in the retro-arterial tunnel, but prefers, when possible, to re-locate the anastomosis anterior to the crossing jejunum. As an alternative Estrada recommends closure of the transverse colon at the line of resection as a blind end with construction of an end-to-side ileocolostomy anastomosis with the left colon.

With a viable volvulus, Estrada recommends detorsion, cecostomy and/or cecopexy in the right lower quadrant. A later second procedure is recommended should "tunnel obstruction" to the transverse colon develop.

In a later publication by Estrada and Gurd,[2] a case report of an acute viable volvulus with underlying "reverse rotation" is presented. After a preliminary decompression operation, a complete restoration of normal anatomy could be accomplished. In this case there was no posterior fixation of the right colon or its mesocolon, nor was there any posterior fixation of the small intestinal mesentery. After detorsion of the mid-gut volvulus, it was possible to additionally rotate the whole mid-gut 360 degrees counterclockwise. With ascending colopexy in the right abdomen and with small intestinal mesenteric fixation in the left abdomen and with construction of a duodenal-jejunal mesenteric aperture, a normal anatomical arrangement of the mid-gut resulted.

There is considerable doubt in this author's mind as to whether Estrada and Gurd's case can properly be termed one of reverse rotation inasmuch as no tunnel was present. However, since a tunnel can easily be opened via mobilization of the posterior mesenteric attachment of the small intestinal mesentery, then Estrada's suggested method of management could be applied to reverse rotation.

Butler,[3] reporting a case of volvulus of the cecum complicating non-rotation of the mid-gut, comments on his case as follows: "When a case of apparent reversed rotation is discovered at operation, and fixation of the mesentery is found to be lacking, it would appear well worthwhile attempting to reproduce the state of non-rotation by rotating the whole mid-gut through 180 degrees in an anti-clockwise direction. If this could be accomplished, it would be a simple, safe, and physiologically sound method of relieving compression of the transverse colon. It has been shown by Ladd and Gross that intestinal function in the non-rotated position is quite satisfactory."

W. E. Ladd[4] first utilized left lower quadrant placement of the cecum for infants with duodenal obstruction from adhesive bands from an undescended cecum. The procedure was also employed for volvulus neo-natorum related to undescended cecum in which mesenteric basilar attachment is shortened by failure of cecal descent. Mobilization of the right upper quadrant cecum and right colon with left lower quadrant placement so as to widen the base of mid-gut fixation has proved to be eminently satisfactory, and has become a standard method of management for these conditions. There are many cases of asymptomatic non-rotational positioning of the mid-gut which are discovered incidentally at surgery for other conditions and at diagnostic barium enema.

Left lower quadrant positioning of the right colon seems to this author to be the most innocuous and physiological method of surgical management of reverse rotation. Conversion of reverse-rotational to non-rotational positioning involves mobilization of the posterior mesenteric attachment over the vena cava and abdominal aorta up to the inferior angle of the mesenteric colonic tunnel. With the tunnel thus opened, the transverse colon can be withdrawn from its retro-arterial entrapment and placed in the left abdomen without residual hazard of later "tunnel obstruction."

It appears to the author that there is considerable confusion among authors as to criteria for defining reverse rotation. It seems to this author that there must be posterior small intestinal mesenteric fixation with resultant formation of a retro-arterial (jejunal) tunnel traversed by the transverse colon before reverse rotation can be established. Without this fixation and without resultant tunnel formation, the whole mid-gut could migrate freely and could be found in any position, i.e., reverse rotation, non-rotation or incomplete rotation.

Summary

1. A case of reverse rotation of the mid-gut presenting as an acute volvulus of the right colon is presented.

2. The normal and abnormal embryology is reviewed.

3. The presented case was successfully managed by detorsion of the acute volvulus, mobilization of the posterior small intestinal mesenteric attachment with opening of the retro-arterial tunnel, release of the transverse colon from its tunnel entrapment, followed by left lower quadrant cecopexy.

4. It is recommended that decompression cecostomy be added as an ancillary procedure in the presence of volvulus of the right colon.

5. Other methods of surgical management are discussed.

6. A criterion for defining the state of reversed rotation is suggested.

7. It is suggested that conversion of reverse rotational positioning of the mid-gut to non-rotational positioning (point No. 3) be included in the armamentarium of surgical management of reverse rotation.

Acknowledgement: Appreciation is hereby expressed to David Waxman, M.D. and Arch S. Beatty, M.D. for their medical and surgical assistance on this case.

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Hypothyroidism and Allergy: Confusion in Diagnosis

Some years ago, a patient, for whom an otolaryngologist had prescribed thyroid extract for his nasal congestion with excellent results, was seen by the writer. The case was especially interesting, because the otolaryngologist had prescribed without benefit of diagnostic tests, merely recognizing a hypothyroid nose. Also, his therapeutic skill was not up to his diagnostic acumen, as he had had the patient take thyroid only intermittently, and the patient had seen his symptoms wax and wane with medication. This was new in my experience, but I have since found it not uncommon. Little mention of vasomotor rhinitis in hypothyroidism is made even in allergy literature, and the purpose of this paper is to call attention to its existence.

Hypothyroidism has been termed by Jackson one of the commonest and one of the most commonly overlooked diseases.[1] According to studies by Lowery and Starr, at least one in every 20 adults suffers from this condition.[2] If true, this indicates that if it is not discovered in one of every 20 of patients seen, the diagnosis frequently is being missed. Of these many hypothyroid individuals, only a small number will have the complaint of rhinitis or conjunctivitis as one of their symptoms, but the possibility should be thought of in all patients with *perennial* nasal symptoms. In such cases, the more common symptoms of hypothyroidism should be specifically inquired for: fatigue, especially in the mornings even after a good night's sleep (and many sleep poorly), dry skin and hair (and occasionally thinning of hair on the scalp or leg, or hair that won't take a curl); brittle and ridged nails; intolerance to cold; constipation; menstrual disturbances (especially a long cycle and long or heavy flow); muscle aches (particularly of the calves—or sometimes nocturnal leg cramps); irritability and tenseness; and inability to lose weight despite conscientious dieting (although many are normal weight and a few underweight). The patient coming for consideration of what seem to be allergic symptoms usually fails to volunteer these complaints. They must be searched for. It must be remembered that only a few of these symptoms may be present. There are degrees of the hypothyroid state. It is not an all-or-none matter, i.e., overt myxedema. Of historical importance also is the presence of some form of any thyroid disease, not necessarily just hypothyrodism, in other members of the family.

The rhinitis of hypothyroidism is said by Werner in his text, *The Thyroid*, to be not uncommon, perennially but less with high barometric pressure, worse in dampness and with symptoms of "nasal stuffiness, post-nasal discharge (clear, sticky mucus) particularly bothersome in the morning, constant cold, headaches . . . (Examination reveals) red lateral bands and some excess of lymphoid nodules on the posterior pharyngeal wall; posterior tips of the turbinates are swollen, pale and purplish."[3] Proetz describes the membranes in about 75% as appearing "chapped" and slightly red, sticky and dry, occasionally a little bloody; in the remaining 25%, the membrane is pale and occasionally boggy.[4] He lists obstruction as the chief complaint in one third, "chronic cold" in one third, and headache in one third, with rhinorrhea prominent in only a few. Werner also mentions that the vocal cords may be thickened, causing chronic hoarseness and a "lump in the throat" sensation; also, that the external auditory canals may be dry and itchy. Neither of these authors reports conjunctivitis as a component. However, Proetz, quoting Byrom, defines the physiopathology of myxedmea as "expansion of ground substance into the circulating substance," and theorizes that this occurs especially readily in the highly vascular and loose tissue of the nose. This could apply to the palpebral conjunctivae also.

In confirming the diagnosis of hypothyroidism, the writer has long believed that the best test for establishing hypofunction of the thyroid is the determination of the basal metabolism rate. The test must be performed carefully by a confident, experienced technician who fully reassures the well-rested, relaxed patient (the doctor already having described the procedure to him) and does not leave him alone with the machine.

This latter point is mentioned as a mechanism to avoid producing panic in a patient who, left alone, is convinced he will suffocate before the technician returns. Keating writes of this procedure, "The BMR . . . reflects primarily the impact of the thyroid hormones upon the organism . . . may frequently prove superior to the other procedures available. The BMR remains particularly useful as the guide to replacement treatment in hypothyroid states."[5] The various radioisotope studies are probably more accurate tools in investigating the hyperthyroid states, as perhaps also is the protein bound iodine, with all its inaccuracies due to unsuspected intake of iodine, mercury and other drugs (plus the necessity of extremely careful technic), but they are not superior to the BMR, if as good, in studying a possible deficiency.

A still simpler test, one that can be done in five minutes and quite often gives all the confirmation necessary for the clinical suspicion of hypothyroidism, is the measurement of the Achilles reflex duration. This was originally developed by Chaney at the Mayo Clinic in 1924[6] and has come into fairly wide use since Gilsen devised a simple instrument, marketed since 1959.[7] This type utilizes the foot of the kneeling patient handing in a photoelectric beam, the reflex being recorded by an electrocardiograph and easily measured, with the hypothyroid range 360 to 380 milli-seconds up, a "sluggish" reflex. Not too infrequently there are "false normal" results, and in patients with a normal or borderline Achilles reflex I employ the less convenient basal metabolism rate determination. This often establishes the diagnosis where the reflex test does not. Apparently thyroid deficiency can be selective and not prolong the reflex in some patients, just as it does not affect the nasal membrane in most. It is said that thyroid function affects "the dynamics of muscle contraction (polymerization of actomysin)."[8] Other conditions can slow the reflex, such as congestive heart failure, severe emphysema, uremia, hyperkalemia, hypoproteinemia in nephrosis, anemia, and anxiety states. Drugs which can shorten it are amphetamine, ACTH, corticoids, and salicylates and estrogens in high dose. Vitamin B_{12} administration can either lengthen or shorten the measurement.[8]

Illustrative Cases

Case 1. The patient was a 64-year-old woman. In early spring 18 months before, she had begun having episodes of severe rhinorrhea and sneezing, itching and watering of the eyes, and sleepiness of one or two days duration, continuing year-round except for occasional remissions of a few days. There were no historical features as clues to an allergic cause. Family history was negative for allergies.

A "high index of suspicion" for possible hypothyroidism should be maintained in the consideration of rhinitis and conjunctivitis with no apparent infectious basis. In such cases, at least a simple diagnostic test of thyroid function should be performed. The author suggests the Achilles reflex measurement test for this purpose. Doctor Lemmon is in private practice and delivered this paper before the Southwest Allergy Forum in Hot Springs, Arkansas, in April of 1964.

Examination revealed pharyngeal injection, tender left antrum, and dry, congested and slightly pale nasal mucosa. White count was 13,050 with 8% eosinophiles; sedimentation rate 35 mm. in one hour. Nasal secretions contained no eosinophiles. Sinus and dental x-rays were normal. Intradermal testing gave significant reactions to grass mix, tree mix, house dust, and a few foods.

After fruitless elimination of test-positive foods, immunization with grasses, trees, dust and bacterial antigen was carried out for nearly a year with little or no benefit. Finally, hypothyroidism was suspected. Achilles reflex measurement was found to be 400 milliseconds and BMR −12%, treatment with triiodothyronine was started, and hyposensitization discontinued. Within one month she was much improved, and after four months, on thyroxine .4 mg., she was practically symptom-free. She has had only two or three mild episodes similar to her past ones in the last year. She takes no other medication than vasodilators which she has taken for a number of years for angina pectoris, which has not increased on thyroxine.

This was a particularly puzzling case of severe, *intermittent* rhinorrhea, a pattern typical of neither hypothyroidism nor allergy. Blood eosinophilia and positive skin reactions indicated treatment of allergy, and only its failure suggested the possibility of hypothyroidism. Yet, the prompt and sustained response to thyroid medication leaves no doubt as to the cause. Triiodothyronine is usually prescribed by the writer initially, because of its rapid and more obvious effect, then thyroxine usually used for maintenance therapy.

Case 2. The patient was a 46-year-old minister. As long as he could remember, he had had hoarseness, rhinitis and clear to yellow nasal and postnasal drainage. He had been studied by a competent allergist in another city and started on immunization with ragweed, grasses, house dust and molds two years prior to my seeing him. (The patient stated the allergist did this reluctantly, apparently not convinced he was allergic.) There was only equivoeal benefit from this. He had always been overweight, had legache and constipation, and tired rather easily. His brother had asthma and his mother, a goiter.

Examination revealed blood pressure of 150/114, dry skin, moderate injection of pharynx and red, dry nasal membrane. Blood count was normal, serum cholesterol 290 mg.%, BMR –25%, and Achilles reflex 420 milliseconds. Only intradermal testing with bacterial antigen was done at this time and it was negative.

He was taken off immunization and started on thyroid medication, increasing slowly to .4 mg. thyroxine. Very promptly his hoarseness improved. His preaching required much use of his voice, and he could not remember having so little trouble with it. The other, more typical symptoms of hypothyroidism abated, and he began losing weight.

The correct diagnosis was suggested here, as in the previous case, by the failure of treatment for allergy. Had the *perennial*, longstanding symptoms led to suspicion of hypothyroidism, the diagnosis would probably have been made initially.

Case 3. The patient was a 43-year-old woman. For about a year, her eyes had itched and burned most of the time, relieved only by her keeping them closed. Her nose was mainly dry, but ran at times with some blocking and itching. This lasted from October or November until summer, flared again in September and continued until first seen in January, 1963. No specific allergic factors were suggested by her history. She had used "artificial tears" prescribed by an ophthalmologist with fair results. She was tired, had dry skin and hair, brittle nails, backache, some cold intolerance and constipation. Family history was negative for allergies or thyroid disease.

Examination showed only moderately red pharynx and conjunctivae, both dry. Blood count was normal except for hematocrit of 36 volumes per cent and five per cent eosinophilia; no secretion could be obtained for search for eosinophiles. BMR was –20%. Intradermals for inhalants gave no reactions except equivocally to house dust.

The patient was started on thyroid medication. The dose was increased gradually over four months to five grains of desiccated thyroid daily. This resulted in almost complete relief of eye and nose complaints and other symptoms of hypothyroidism. Seven months later she was having some recurrence of symptoms, also was more tired, and Achilles reflex measurement was 380 milliseconds. She was switched to thyroxine .6 mg. daily and rapidly improved, but her eyes did not clear completely. At this time, intradermal tests were repeated, with definite positive reactions to molds and bacterial antigen. She was immunized with mold extract and mixed respiratory vaccine, with complete control of symptoms.

This illustrates the coexistence of the two states and the need to treat both. Her conjunctivitis was caused in part by hypothyroidism, but not entirely. This also is an example of the occasional case in whom it is necessary to increase thyroid dosage, after apparently reaching a euthyroid state earlier in treatment.

SUMMARY

A "high index of suspicion" for possible hypothyroidism must be maintained in the consideration of rhinitis and conjunctivitis apparently not on an infectious basis. There is no typical clinical picture in the nose and eye, and whenever other symptoms suggest the diagnosis, at least a simple diagnostic test of thyroid function should be performed. Such a test is the Achilles reflex measurement, which often is sufficient to establish the diagnosis. If its results are equivocal, another and usually conclusive procedure equally available in the physician's office is determination of the basal metabolism rate.

When hypothyroidism is diagnosed in a patient with what seem to be allergic symptoms, it is sometimes worthwhile to treat this condition first. It may obviate the need for studies for possible allergies.

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AUDREY M. THAMAN, M.S.W. *and*
ALLAN BARCLAY, Ph.D., *St. Louis*

Physicians' Attitudes Toward Institutionalization of Mentally Retarded Children

Although the advantages and importance of early home care as opposed to institutionalization have been discussed at length in the literature,[1, 2] a significant number of parents from our clinic population continues to report that they have been advised by physicians to arrange early institutional placement of a mentally retarded child. In recognition of the need for further evaluation of physicians' thinking with respect to institutionalization, a study was undertaken under the auspices of the Child Development Clinic, Saint Louis University Department of Pediatrics, to evaluate factors which may influence physicians in deciding whether or not to recommend institutional placement.

Similar investigations conducted by Olshansky[3] et al studied three groups of practicing physicians made up of pediatricians, obstetricians, and general practitioners, as well as a fourth group of internes and first-year residents, to determine certain attitudes toward mental retardation, especially attitudes toward early institutionalization. On the basis of their findings, these authors suggest that the majority of physicians favored keeping the pre-school retarded child at home and opposed immediate separation of the mother and the retarded child at birth. Interpretation of the various attitudes manifested by the physicians they studied indicated a "healthy change in attitude" from the earlier opinion that all retarded infants should automatically be put into an institution, or that they should all be kept at home regardless of circumstances.

Results of a recent physicians survey on mental retardation appearing in *Patterns of Disease*,[4] based on the responses of 2,519 physicians, indicated that 45% of the physicians surveyed felt that a newborn infant with the diagnosis of mongolism should be institutionalized, while slightly less than 40% believed that parents should try to bring up a child with mongolism. Five per cent thought that parents should try at first and then institutionalize, while the remaining physicians thought that each case needs individual attention, and that such factors as the age of the parents must be considered.

An earlier study dealing with the management of the mentally retarded child contains numerous examples of difficulties arising from poor case management of such children. Using data obtained from 105 families having a retarded child less than one year of age, Koch[5] found that one of the complaints was: "He rushed us into placement." Parents were told. "Put the baby away and forget about him," and "The other children will be affected if you keep him home."

The research presented in this paper represents efforts to add to these and related studies some further information regarding attitudes of physicians in respect to institutionalization of mentally retarded children.

Method of Approach

An attitude scale was developed by constructing 15 statements expressing a range of attitudes toward institutionalization. Items were presented for rating on a four-point scale from "strongly agree" to "strongly disagree."

Two open-ended questions asked the physician for his opinion of the view that immediate separation of the mother and retarded child at birth is the best possible plan, and for a brief discussion of the major factors which might influence his decision in recommending institutionalization of a retarded child.

Respondents were asked for information about themselves, including their number of years in practice and for an estimated number of retarded children seen in their practice per year, in order to determine the effects of these factors on their attitudes.

Questionnaires were mailed to 50 each of obstetricians, general practitioners, and pediatricians, selected from the membership roster of the Saint Louis Medical Society. Questionnaires were likewise mailed to a sample of 43 pediatricians, selected on the basis of staff affiliation with Cardinal Glennon Memorial Hospital. The highest return rate (53%) was obtained from the pediatrician group, and can be explained, in part, by the personal interest of the members of the staff of Cardinal Glennon Memorial Hospital, wherein the Child Development Clinic is located.

In the final analysis of the data, nine of the 15 items thought to be most significant were utilized, and it was decided to dichotomize responses simply in terms of "agreement" or "disagreement." Attitudes could not be judged in terms of the possible influence of the actual number of retarded children seen per year by a given group, as some respondents reported the estimated number of new cases seen per year, while others estimated the over-all number of retarded children seen in a year. General practitioners and obstetricians were not classified in respect to the dimensions of their experience because of the limited return.

RESULTS AND DISCUSSION

Table I presents the percentages of agreement and disagreement with the statements of the questionnaire.

The majority of physicians disagreed with the statement that a retarded child should be institutionalized as soon after birth as possible, and agreed that a retarded child should stay in the home at least through the early formative years. The highest rate of disagreement (46%) with the latter statement, found in the obstetrician group, possibly lends support to the allegations of some parents of our own clinic population, that many obstetricians recommend separation of the retarded child from the mother at the time of birth.

However, the fact that obstetricians expressed the highest rate of agreement (85%) with the statements that retarded children under five or six years of age should not be removed from the home unless the degree of retardation is severe, and immediate separation is best only if retardation is severe and associated with a physical disability, suggests their opposition to early institutionalization. Perhaps this disparity of views can be explained in terms of the obstetrician's limited experience with the problem. His responses must be judged against the fact that he generally becomes involved with the question of institutionalization only in cases of children identifiable as mentally retarded at birth, that is, the severely retarded and the mongoloid child.

More than half of the respondents disagreed that if institutionalization is felt to be necessary, it is best to wait until the child reaches school age. Consistent with this view, more than half the general practitioners, obstetricians, and less experienced pediatricians agreed that if it is felt a child may someday be institutionalized, it is best to arrange placement immediately after birth. The contradiction between these expressed attitudes and those discussed earlier, which suggest that the majority of physicians opposed early separation, is perhaps an indication that most physicians have not integrated their views into an organized perspective, and suggests that they may intellectually accept one attitude, but in practice are guided by another. That is, it seems probable that the physician has conflicting feelings about institutional placement and perhaps unconsciously wishes to avoid the problem of the retarded child who is, by usual medical standards, untreatable. It is interesting to note that the lowest rate of agreement (47%) with the statement, that if it is felt a child may someday be institutionalized it is best to wait until he or she reaches school age, was found in the senior pediatrician group and would seem to reflect their thinking that the deprivation of the early mother-child relationship is potentially as damaging to the retarded child as it is for the normal child, and should be avoided even with children for whom eventual institutionalization is inevitable.

Seventy per cent of all respondents agreed that immediate recognition and diagnosis of mental retardation can seldom be made at the time of birth and there was also general agreement in respect to the statement that physicians are reluctant to make an early diagnosis of mental retardation unless the symptoms are quite obvious. Ninety-four per cent of the general practitioners and 100% of the obstetricians agreed. Ninety-

A majority of physicians apparently oppose early institutionalization of mentally retarded children, according to this investigation of physician attitudes. The authors found significant evidence that social factors as well as medical, influence the physician's decision in this matter. They also found that most physicians are reluctant to make an early diagnosis of mental retardation unless symptoms are quite obvious. Miss Thaman is Social Worker for the Child Development Clinic and Field Instructor in the School of Social Service, Saint Louis University. Doctor Barclay is Associate Professor of Psychology at the University and Chief Psychologist at Cardinal Glennon Memorial Hospital for Children.

TABLE I

PERCENTAGES OF AGREEMENT AND DISAGREEMENT

	Type of Physician							
	GENERAL PRACTITIONERS N=17		OBSTETRICIANS N=13		PEDIATRICIANS (IN PRACTICE LESS THAN 10 YEARS) N=17		PEDIATRICIANS (IN PRACTICE MORE THAN 10 YEARS) N=32	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
1. Immediate separation is best only if retardation is severe and associated with a physical disability.	76	24	85	15	65	35	75	25
2. A retarded child should be institutionalized as soon after birth as possible.	24	76	46	54	24	76	19	81
3. Retarded children under five or six years of age should not be removed from the home unless the degree of retardation is severe.	76	24	85	15	65	35	63	37
4. Immediate recognition and diagnosis of mental retardation can seldom be made at time of birth.	76	24	46	54	88	12	72	28
5. A retarded child should stay in the home at least through the early formative years.	71	29	54	46	65	35	66	34
6. If the feeling is that a child will someday be institutionalized, it is best to arrange placement immediately after birth.	53	47	62	38	53	47	47	53
7. Physicians are reluctant to make an early diagnosis of mental retardation unless the symptoms are quite obvious.	94	6	100	0	94	6	93	7
8. If institutionalization of a retarded child is felt to be necessary, it is best to wait until he or she reaches school age.	24	76	46	54	41	59	38	62
9. The diagnosis of mental retardation cannot be made until the child is at least six months of age.	76	24	54	46	65	35	19	81

three per cent of the more experienced pediatricians and 94% of the less experienced pediatricians likewise agreed with the statement. The fact that the pediatrician's thinking tended to parallel the thinking of the other physicians is reflective that the pediatrician is as conservative in his clinical judgment of infants as are other physicians, in order to lessen the probability of a false diagnosis of mental retardation. The general agreement among the various groups suggests the difficulty of making a definitive diagnosis, except for the severely and visibly retarded, and reflects their recognition that there are limits to the methods of accurately assessing the infant's mental development.

The Child Development Clinic, an evaluation and teaching center concerned with mentally retarded children, operates within the Saint Louis University Department of Pediatrics in cooperation with the Division of Health of Missouri and the Children's Bureau, United States Department of Health, Education, and Welfare.

The physicians were in marked disagreement with regard to the statement that the diagnosis of mental retardation cannot be made until the child is at least six months of age. The highest rate of agreement with the statement was found among general practitioners with 76%. Sixty-five per cent of the less experienced pediatricians, 54% of the obstetricians, and 19% of the senior pediatricians agreed. The striking difference in response between the more and less experienced pediatricians suggests that confidence in appraising the young child increases with the length of time in pediatric practice. A comparison of the senior pediatrician's response to those of the other groups of physicians suggests that the senior pediatrician's experience, i.e., his training and practice, is a factor which accounts for greater confidence in making appraisals of the developmental level and intelligence of patients. This belief has already been stated by Perlstein[6] as follows:

> "A pediatrician who has seen a lot of normal children is supposed to have a sort of built-in Gesell scale, so that he can readily look at a child and get a pretty good idea of where this child belongs in relationship to mental adequacy."

In an attempt to elicit further elaboration on previous responses, each respondent was asked to comment on the view that immediate separation of the mother and retarded child at birth is the best possible plan. Eleven of the 17 general practitioners expressed varying degrees of opposition, while six favored immediate separation. Their range of views can be seen from the following selected quotations:

> "If diagnosis is certain I believe immediate separation is best, before mother becomes attached to the child."

> "I do not believe that immediate separation of the mother and child is necessary. Parents need time to accept the idea that their child is retarded and needs special help."

On the other hand, eight of the 13 obstetricians were similarly opposed to immediate separation while two favored immediate separation, two made no reply, and one response was too ambiguous to classify. Some verbatim responses were:

> "This view does not consider mother love and all its possibilities; nor does it give the other family members credit for the ability to cope with and help the retarded child."

> "I feel separation is best for the future happiness of the parents and other children. The retarded child is a burden on the family."

Pediatricians' responses to the question concerning immediate separation indicated that 30 of the 49 respondents were opposed while 13 favored immediate separation. Five were too ambiguous to classify, and one made no response.

Following are several direct quotations which reflect their attitudes:

> "I feel this is an intelligent and humane plan."

> "I think this is harmful to the child as it does not give him the best opportunity to develop to his fullest capacity."

> "This gives rise to guilt in the parents. Also the question arises and remains unanswered whether the child would have done better had it not been separated at birth."

In response to the question, "Could you briefly discuss the main factors which might influence your decision in recommending institutionalization of a retarded child?," severity of retardation was the most frequently cited factor by all the respondents. "Severe retardation" was generally felt to include children who are harmful to themselves and others, and children who require nursing care. Rejection on the part of parents, adverse effect on siblings, advanced age of parents, family instability, family illness, and unsatisfactory home environment received about equal mention as factors which might influence a physician to recommend institutional placement of a retarded child, though most physicians qualified their responses by stating that each case must be judged individually.

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1. Welch, C. E., Diverticula of the Alimentary Tract, in Conn, H. (editor): Current Therapy—1961, Philadelphia, W. B. Saunders Company, 1961, pp. 224-225.

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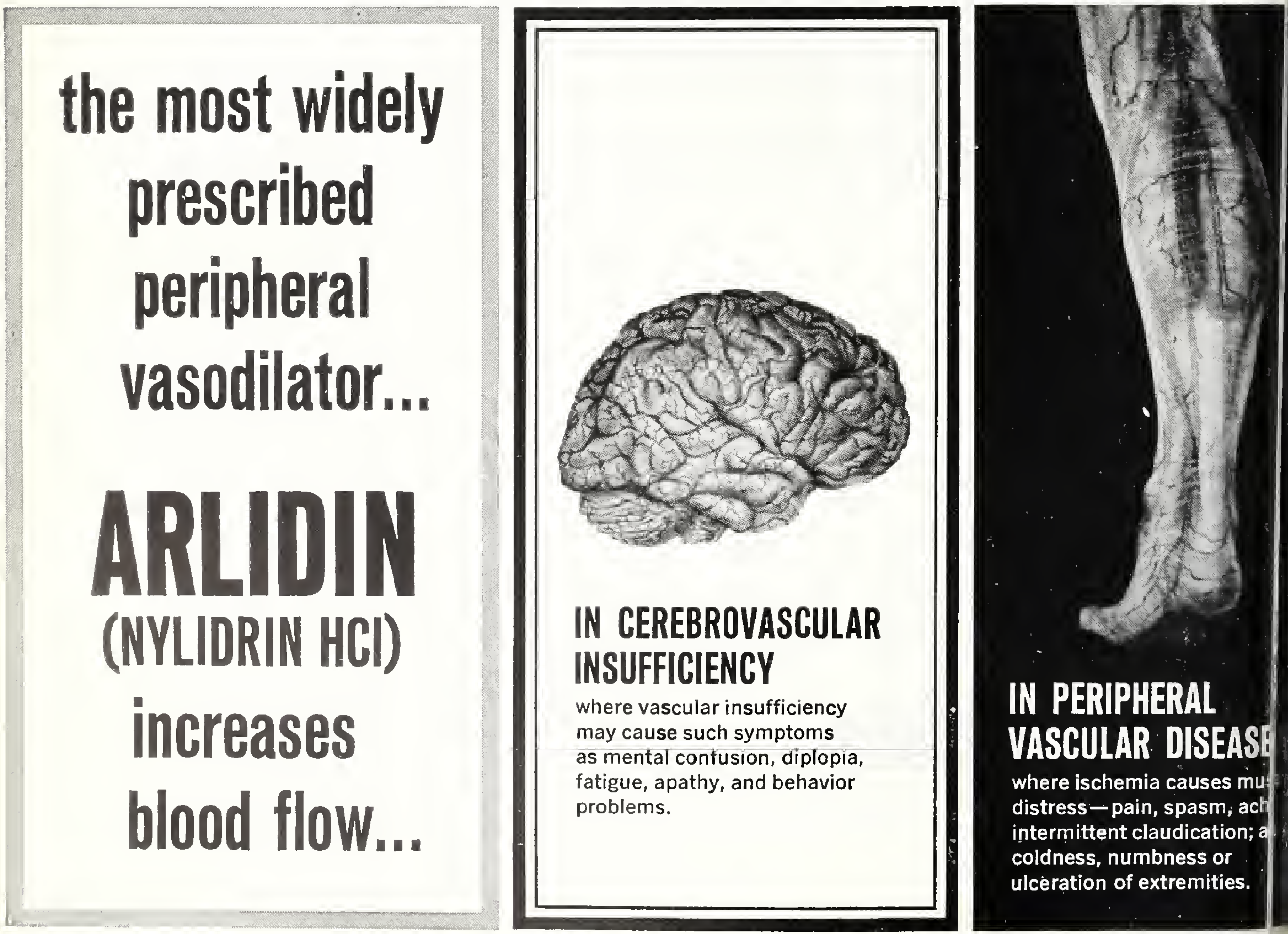
It is interesting to note that only seven respondents of the total sample considered the availability of institutional facilities as a factor, despite the factor that overcrowding of public institutions is a chronic problem, and that persons for whom an application is made but who cannot be admitted are usually placed on waiting lists for months or even years. Also, the expense of private institutional care is often exorbitant and impractical for the family of average means. Thus, even in family situations which are considered critical and the admission of the child is felt to be urgent, a recommendation for institutionalization is often unrealistic. Practically speaking, one physician commented:

> "I wonder if people who feel children should be separated from parents have considered the economics of the situation. Where can one find an institution which is able to give a baby love and care and feeding as economically as a mother in her own home?"

Taken as a whole, the findings of the present study suggested that physicians were not generally inclined to recommend early institutionalization of mentally retarded children. However, there was some evidence of the more traditional view favoring early placement, and it appeared that many physicians were perhaps not sufficiently aware of the bases of their opinions to formulate them clearly. We would suggest that an awareness of how the physician's own emotional attitudes influence his opinion is basic to his effectiveness in dealing with this multifaceted problem. The physician should realize that when faced with the problem of mental retardation, he is subject to feelings of guilt, helplessness and despair, just as parents are, and that he may unconsciously wish to be rid of the defective child. The physician, like the parents, should recognize that these are not unusual reactions and need not be denied, but dealt with realistically.

Most gratifying was the large number of respondents who felt that a sound recommendation concerning institutionalization can be made only on an individual basis. More physicians suggested that their decision is based on careful professional evaluation of what is best for the child and the family, while relatively few indicated a rigid anti-placement or pro-placement bias. Authorities in mental retardation generally agree that for most retardates there is no truly desirable substitute for family living. Children raised in overcrowded and understaffed institu-



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tions generally lag behind in all dimensions of growth. This, of course, does not mean that institutional care will not always be needed for the profoundly handicapped child who may be too much for the parents' energies, or beyond their ability to manage him.

This study has grossly defined attitudes of physicians in terms of their field of specialization. More discriminating investigations in terms of their knowledge, training and interest in mental retardation, as well as their personal feelings about this subject, could provide additional insight into physicians' views on the mentally retarded child.

SUMMARY

The present data show that the majority of the physicians who were studied opposed immediate separation of mother and retarded child at time of birth, and favored keeping the pre-school retarded child at home, unless the degree of retardation was severe. There was also general consensus that physicians are reluctant to make an early diagnosis of mental retardation unless the symptoms are quite obvious. Varying degrees of agreement and disagreement with these issues, from the points of view of general practitioners, obstetricians, and pediatricians have been presented. The vast majority of physicians cited social factors, as well as medical, which influence their decision to recommend institutional placement, and noted that each case should be considered on an individual basis.

Acknowledgments: The authors are especially indebted to A. R. Sharp, M.D., Director, Child Development Clinic, for assistance and suggestions in the preparation of this article, and to the Saint Louis Medical Society for their helpful cooperation.

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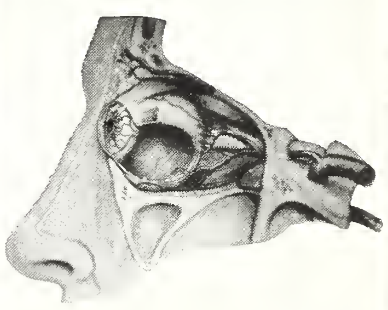

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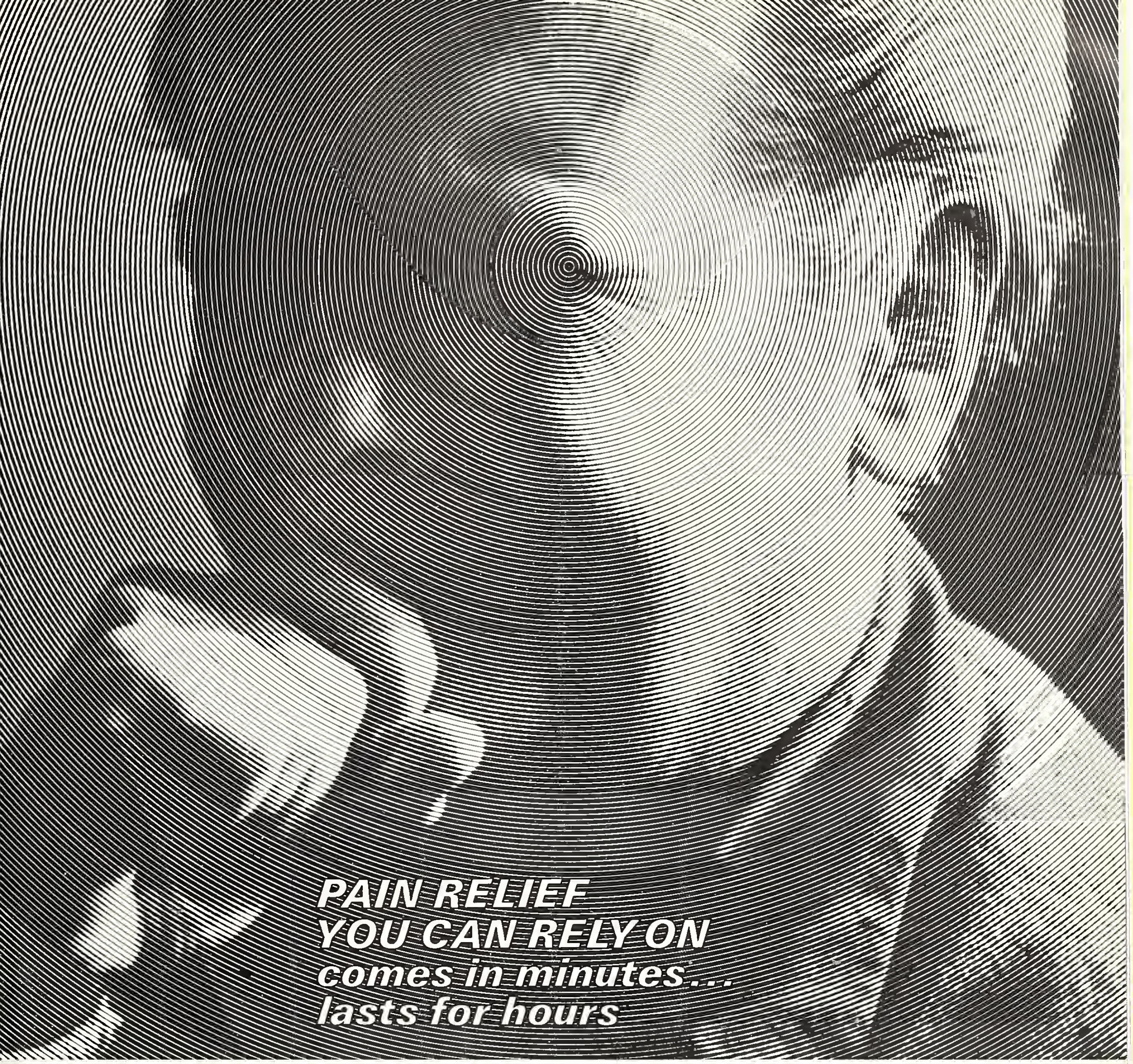
President's Message

It is an obvious fact that these are trying and dangerous times for the medical profession. The first step toward socialized medicine, in the guise of "medicare" and under a powerful central governmental bureaucracy, is a definite possibility. A program to provide necessary medical care for needy segments of our people without further enlarging "big government" is being advocated by the AMA. This program is supported by members of Congress who agree that any step toward socialized medicine will also be a step toward lower quality medical care. It is, of course, obvious that there can be no unanimity of opinion among members of the profession on this matter. But it is also obvious, that as many of us as possible must forget other differences and stand together in this one common cause, a cause which we know will produce the greatest good for the greatest number of those we serve. Let us all . . . general practitioner, specialist, academician, researcher, administrator or any other . . . unite in the fight to preserve and improve that system of medical care which stands as a bright beacon of excellence in a world of increasing mediocrity.

Leonard T. Furlow



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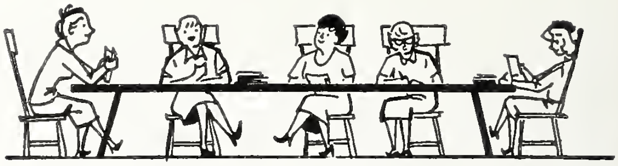

Hello again! As I write this, I feel a little like Mrs. Job! I was just recovering from a slight case of the shingles (which I really didn't need at all) when my dear husband suffered a light coronary while we were watching our son Jim play ball at Chillicothe! I drove him home—25 miles which seemed like 250—over icy roads at a snail's pace! It was a terrifying experience, but we are so grateful that at this writing he seems to be doing well, and with proper rest and care promises to be as good as new! We're praying it will be so.

Mrs. R. W. Bohnsack

It's been most difficult to concentrate on Auxiliary; but thank goodness, I had worked hard since the first of the year and have a great deal accomplished toward our Convention. Thanks to Venus Schattyn and Mil Diehr, co-chairmen in St. Louis County, and their committees, plans are practically completed for a wonderful meeting. They have some secrets which they refuse to disclose. Be sure to come to Convention April 4-7. Mrs. William H. Evans, our national President, will be our special guest, and we're hoping much our own Betty Sutter, national President-Elect will also be present. Of course, we're so proud that Ruth Kelling is now President of Southern and will be the guest speaker at our Tuesday luncheon.

We have started our Medical Self-Help Training Program here with 36 members enrolled in the first class and the promise of more to come! We had people from many surrounding towns, and who knows but we may rival Macy Brady? Everyone was most enthusiastic. I'm sure your own community would be the same way.

A nice letter from Mrs. Thomas Schneider, President of the new Lincoln-St. Charles group tells me that they have 16 paid members and the promise of 13 more by the end of January. Congratulations to them! They're off to a flying start and will be an enthusiastic addition to our state organization.

I received a letter from Hazel Anderson, our National IHA Chairman, saying that the new address of the World Medical Relief is:

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She also asked that the name of the Auxiliary as well as the donor's name and address be included both inside and on the outside of every package and carton sent to them. Please heed this when you mail your sample drugs, supplies and "Johnny Coats" (hospital gowns made from men's old white shirts), which are so much needed!

Some wonderful material from Ruth Kelling reminds me that our Doctor's Day celebrations are upon us. March 30 is THE DATE, so please don't forget to honor these wonderful men in some way. Your mayor will be glad to sign a proclamation, red carnations tell of your love and esteem, and you will find that patients love to be reminded so that they may show their appreciation. Please take pictures of your celebration for our Bulletin; and save your exhibits, scrap-books, etc., for our convention as well as for Southern in Houston this fall.

Dr. Donovan F. Ward, President of AMA, has written urging the continued Operation Hometown campaign. Offer your services in this vital effort to your Medical Society. To quote him, "Time is of the essence. The situation in Congress is more serious than it has ever been in the history of the medical profession."

I'm sure you all got your year-books, reports and point-system sheets in on time, as well as your dues, names for Memorial Service, and changes of address. Of course, since I am writing this the last of January, this is wishful thinking on my part! But, I hope it is true, and THANK YOU VERY MUCH! SEE YOU AT CONVENTION—GOD WILLING!

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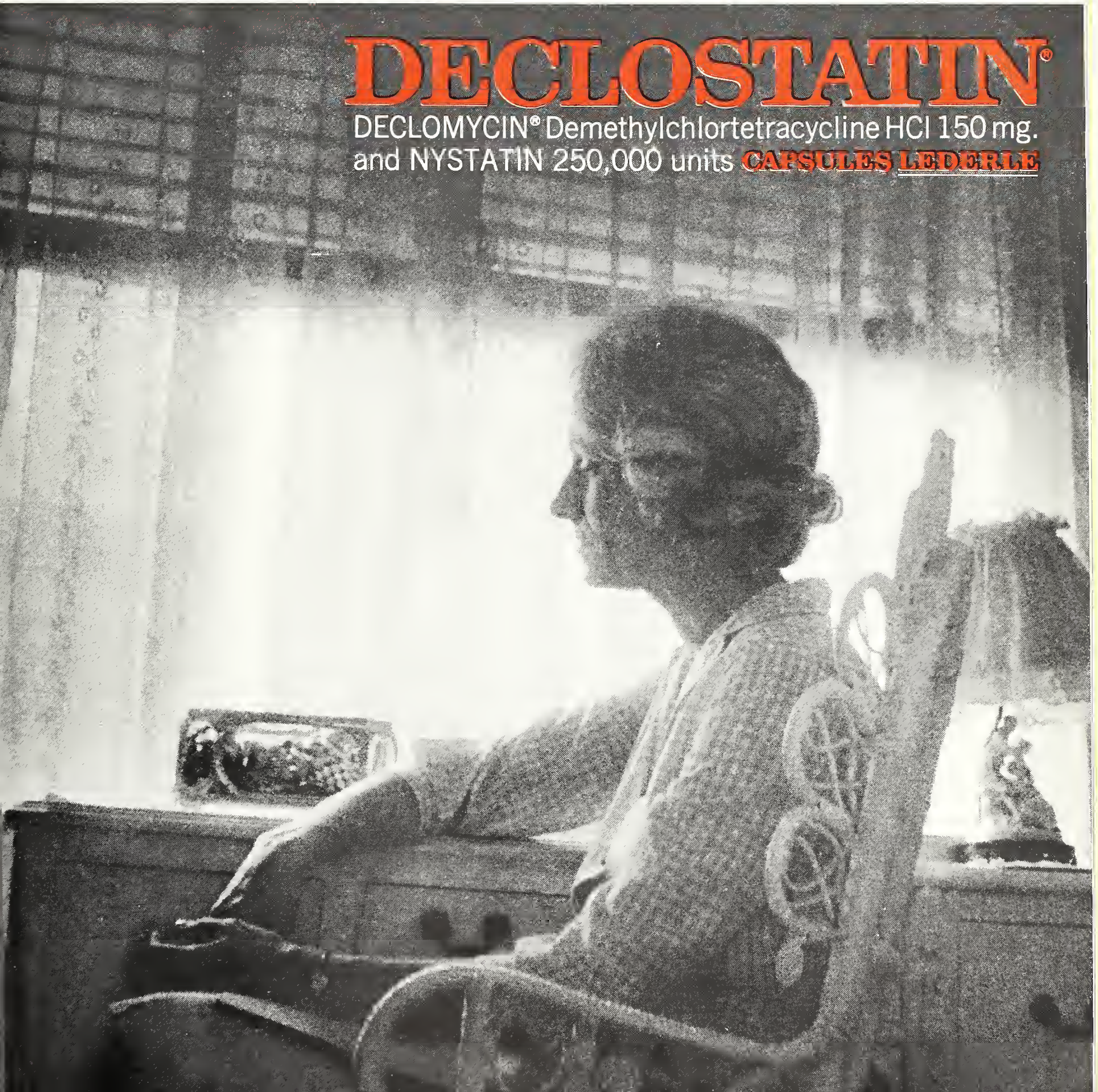

EDITORIALS

"Carry On"

(The following is an excerpt from the inaugural address of **Walter T. Gunn, M.D.,** *upon his accession to the Presidency of the St. Louis Medical Society, January 5, 1965.)*

The events of the last few days thrust upon us the recognition of the imminence of the intervention of government in medicine. If Medicare becomes the law of the land, we have no choice but to conform. However, our obligation in medicine remains to the entire community. The day following the enactment of any such legislation, thousands will become eligible for subsidized hospitalization. Including the two half-empty City Institutions, only dozens of beds are available. I would recommend that the Bed Utilization Committee of each staff study the past year's admissions. This, in order that the life-saving hospital admission to the acutely ill, the coronary infarction, the pneumonia, the acute appendix, be not deferred or refused because of lack of bed space.

In the coming year, we will continue to carry on the same humanitarian activities we have in the past. Aid and support will be given the Diabetes test drive, the Red Cross and its blood bank, Tuberculosis tests on the school children, the Lions' Glaucoma tests, the medically informative programs, the open forums. The Health and Public Instruction Committee will continue to give courses to high school students to stimulate interest in careers in medicine and nursing. We will continue to staff the free clinics of the medical schools and the hospitals. A liaison committee has been appointed to work with the St. Louis City Board of Health, to the end that all school children will be inoculated against preventable diseases. This, of course, regardless of ability to pay.

In the face of these thousands of man-hours donated freely and unstintingly to the benefit of the community health, it is difficult to understand an opinion that this organization exists primarily for the benefit of its own members.

Rapprochement

(The following is a portion of the inaugural address of **James C. Sisk, M.D.,** *who assumed the Presidency of the St. Louis County Medical Society on January 13, 1965.)*

I have asked (that the) Chairman of the Liaison Committee . . . expand that Committee's activities to include, not only neighboring medical societies and medical specialty groups, but also the two medical schools in this area. The purpose of this would be to explore the field of common problems and discuss the divergent views that have led to a schism between academic physicians and practicing physicians of this and other Societies. I see this activity as building a bridge on which attitudes could meet and be brought into the open. This alone would dispel the fear that one group might have of the other's position and would open the way for discussion of basic issues. That, in turn, could lead to a unity of purpose which would prevent our profession from being split in much the same fashion as the British medical profession has been divided by the policies of the National Health Service.

In the current trend of American political philosophy, the town (practicing) physician is having his traditional patterns of practice altered or challenged, while the gown (educator) physician's lot seems to be improving. Research money is readily available to schools in the form of federal aid, and undeniably we have seen great advances in medicine from much of this work.

I would, however, caution those who are now driving so hard to get large scale federal aid for teaching and operating funds, that as such aid becomes increasingly important to the welfare of the schools, federal controls will grow automatically, becoming deeper and more complex and entangled. In this atmosphere there will be the danger of failure by the government planners to take into full consideration the total problem of the individual school. Teaching could suffer, and a school could find itself threatened with the fate of becoming little more than an administrative unit holding several research projects together.

The profession as a whole would suffer from such a chain of events. We, as a Society, must recognize this danger as well as the danger to the free practice of medicine. We must use the established framework of organized medicine to marshal our divergent forces to lead . . . or be led.

The end point for educator and practicing physician alike is the health care of society at large. Without the schools there can be no educated profession; without the practicing profession the schools serve no useful purpose.

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Editorials (cont'd)

Eden, Windsor and Saud

Three men with widely disparate backgrounds . . . One, the former ruler of a primitive segment of ancient Persia—the other two, aristocrats of one of the oldest civilized nations of the earth.

In addition to their positions as members of the governing class, they have other similarities. Their nations are dedicated to a socialist tie approach, giving their citizens medical care to a degree and quality decided on by the government.

In the case of Saudi Arabia, it is precious little, doled out by a capricious government dominated by the whims of its ruler. In the case of England, it is much, provided by a beneficent government according to the majority wish of those governed.

In each instance, the government would assure us the care would be the best available, and that the best available care can only be provided by government. They would also assure us (especially England) that the best medical care can be provided only through governmental means.

But these rulers talk one way and act another when their own health care is involved. At these times, they abandon their own health care schemes and repair to the United States, there availing themselves of the best medical care in the world, providing for both prince and pauper on a free enterprise basis.

We believe one can justifiably point with pride when conditions warrant it. The United States provides individual medical care, on a free enterprise basis, to potentates of socialistic countries. No questions asked, no answers required, the medical care provided is not only the best in the world, it is unlimitedly given, with a *dedicated, conscientious* approach.

The same potentates return home to assure their constituency that the government is the only source of medical care for the populace.

Eden, Windsor, and Saud: Need we say more?

GEORGE J. LYTTON, M.D., Editor,
***Greater Kansas City Medical Bulletin*—January 16, 1965**

Missouri Medicine *welcomes comments and contributions from its readers. Correspondence should be addressed to the Editor with the understanding that such correspondence may be rejected or published (in entirety or in part) at the discretion of the Editor. With the exception of scientific papers, correspondence usually cannot be acknowledged or returned.*

COMMENT . . .

Our Readers Write

Dear Doctor Finnegan:

As an active member of the Missouri State Medical Association, I am writing you . . . to protest against your publication of the guest editorial, entitled "It Happened Yesterday," in the January 1965 issue.

My objection is primarily based on the tone and attitude used by the writer. I find his remarks to be facetious, snide, sarcastic, and so distorted by his own fantasy (and presumed sense of humor) as to be insulting to the reader and to the general public. Whereas the State Medical Association has no control over what is written in the various county medical society bulletins or periodicals, your choice to republish this editorial in the State Journal implies an agreement not only with the position of the writer, but also with the way in which he has chosen to phrase his ideas, and furthermore implies that the State Medical Association likewise supports such an editorial expression.

There are many arguments for and against the concept of Medicare. However, this is a major and serious problem, and deserves to be debated in a rational and objeetive way. Organized medicine in particular should be extremely judicious in the way in which it approaches this problem. For a state medical association to be on record, as it now is through this editorial, seems to me to be a disservice to the profession and, in the long run, to present the public with an even less flattering view of physicians than it now has.

Very truly yours,
Paul A. Dewald, M.D.
St. Louis

OFFICIAL DELEGATES

107th Annual Session

County Society	*Delegates*	*Alternates*
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Audrain	Glen B. Kallenbach, Mexico	Ben N. Jolly, Mexico
Barton-Dade	Herbert Arnold, Lamar	Thomas Carroll, Lamar
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”	C. Thorpe Ray, Columbia	John T. Logue, Columbia
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”	Thompson Potter, St. Joseph	Richard V. Riddell, St. Joseph
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”	Harold H. Cline, Piedmont	
Callaway	Henry Durst, Fulton	James K. Ritterbusch, Fulton
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"	J. Martyn Schattyn, St. Louis	Miles Whitener, St. Louis
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Scott	Alden P. Sargent, Sikeston	Leo Bruce, Sikeston
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References: 1. Rolinson, G. N., and Stevens, S.: Brit. M. J. *ii*:191 (July 22) 1961. 2. Editorial. Lancet *ii*:723 (Oct. 5) 1963. 3. Parker, M. T., *et al.*: Brit. M. J. *i*:1550, 1962. 4. Evans, W., and Hansman, D.: Lancet *i*:451 (Feb. 23) 1963. 5. Richards, J. D. M., and Rycroft, J. A.: Lancet *i*:553 (March 9) 1963. 6. Schaedler, R. W., *et al.*: New England J. Med. *270*:127 (Jan. 16) 1964. 7. Howard, P., and Riley, H. D., Jr.: Abstracts, Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, Oct. 26-28, 1964, New York, N.Y.

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New Members

R. Phillip Acuff, M.D., 702 Jule St., St. Joseph, has become a member of Buchanan County Medical Society. Dr. Acuff is a native of Columbia, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1957. He specializes in radiology.

Alfred D. Biggs, Jr., M.D., 6400 Prospect, Kansas City, has become a member of Jackson County Medical Society. Dr. Biggs is a native of Chicago, Illinois, received his preliminary education at DePauw University, and his M.D. degree at Northwestern University in 1958. He specializes in internal medicine.

Neal S. Bricker, M.D., 660 S. Euclid Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. Bricker is a native of Denver, Colorado, received his preliminary education at the University of Colorado, and his M.D. degree at the University of Colorado in 1949. He specializes in internal medicine.

James N. Burkeholder, M.D., 807 Stadium Road, Columbia, has become a member of Boone County Medical Society. Dr. Burkeholder is a native of Butler, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1961. He specializes in pediatrics.

E. J. Cunningham, Jr., M.D., 615 S. New Ballas Rd., St. Louis, has become a member of St. Louis Medical Society. Dr. Cunningham is a native of St. Louis, Missouri, received his preliminary education at Notre Dame University, and his M.D. degree at St. Louis University in 1963.

Danny L. Dodson, M.D., Crocker, has become a member of Mid-Missouri County Medical Society. Dr. Dodson is a native of Livonia, Missouri, received his preliminary education at Missouri University, and his M.D. degree at Missouri University in 1962. He specializes in general practice.

Harry L. Ellis, M.D., Professional Building, Springfield, has become a member of Green County Medical Society. Dr. Ellis is a native of Willow Springs, Missouri, received his preliminary education at Southwest Missouri State College and his M.D. degree at Baylor University in 1958. He specializes in urology.

Larry E. Farris, M.D., 100 N. Euclid Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. Farris is a native of Acton, Tennessee, received his preliminary education at Henderson State Teachers College, and his M.D. degree at the University of Arkansas in 1958. He specializes in pathology.

Solomon Garb, M.D., 807 Stadium Road, Columbia, has become a member of Boone County Medical Society. Dr. Garb is a native of New York, New York, received his preliminary education at Cornell University, and his M.D. degree at Cornell University in 1943. He specializes in clinical pharmacology.

Phyllis L. Grant, M.D., 2401 Frederick Ave., St. Joseph, has become a member of Buchanan County Medical Society. Dr. Grant is a native of Orange, New Jersey, received her preliminary education at Douglass College, and her M.D. degree at the University of Kansas in 1960. She specializes in pediatrics.

Mario J. Guastello, M.D., 4536 Jefferson, Kansas City, has become a member of Jackson County Medical Society. Dr. Guastello is a native of Kansas City, Missouri, received his preliminary education at St. Mary's College, and his M.D. degree at the University of Kansas in 1963. He specializes in otology, laryngology, rhinology.

L. Howard Hartley, M.D., 1550 E. Sunshine, Springfield, has become a member of Greene County Medical Society. Dr. Hartley is a native of Riverton, Kansas, received his preliminary education at Joplin Junior College, and his M.D. degree at the University of Missouri in 1959. He specializes in internal medicine.

Jefferson D. Kernodle, M.D., Argyle Bldg., Kansas City, has become a member of Jackson County Medical Society. Dr. Kernodle is a native of Randlette, Oklahoma, received his preliminary education at the University of Kansas, and his M.D. degree at the University of Arkansas in 1936. He specializes in pathology.

George H. Klinkerfuss, M.D., 660 S. Euclid Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. Klinkerfuss is a native of St. Louis, Missouri, received his preliminary education at Washington University, and his M.D. degree at the University of Missouri and Washington University in 1956. He specializes in neurology.

John J. McKinsey, M.D., Professional Bldg., Springfield, has become a member of Greene County Medical Society. Dr. McKinsey is a na-

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Shenandoah, Ia.

New Members (cont'd.)

tive of Columbia, Missouri, received his preliminary education at Southern Methodist University, and his M.D. degree at Southwestern Medical School in 1957. He specializes in internal medicine.

William J. Medlicott, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Medlicott is a native of Tacoma, Washington, received his preliminary education at the University of Washington, and his M.D. degree at the University of Washington in 1959. He specializes in orthopedic surgery.

Raul Mercado, Jr., M.D., 1709 Hinkson Ave., Columbia, has become a member of Boone County Medical Society. Dr. Mercado is a native of San German, Puerto Rico, received his preliminary education at Polytunic Institute in Puerto Rico, and his M.D. degree at St. Louis University in 1951. He specializes in radiology.

W. Thomas Morgan, Jr., M.D., West Plains, has become a member of South Central Counties Medical Society. Dr. Morgan is a native of Lebanon, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1961. He specializes in general practice.

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Charles E. Shopfner, M.D., 1710 Independence, Kansas City, has become a member of Jackson County Medical Society. Dr. Shopfner is a native of Fort Smith, Arkansas, received his preliminary education at Oklahoma State University, and his M.D. degree at the University of Kansas in 1949. He specializes in pediatrics.

Mark M. Tendai, M.D., 112 E. Patterson, Kirksville, has become a member of North Central Missouri Medical Society. Dr. Tendai is a native of Czernowitz, Romania, received his preliminary education at St. Louis University, and his M.D. degree at Missouri University in 1963. He specializes in general practice.

J. Allen Thiel, M.D., 141 N. Meramec Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. Thiel is a native of Englewood, New Jersey, received his preliminary education at Rockhurst College, and his M.D. degree at St. Louis University in 1960. He specializes in internal medicine.

Frederick E. Totten, M.D., 95th & Troost, Kansas City, has become a member of Jackson County Medical Society. Dr. Totten is a native of Beattie, Kansas, received his preliminary education at the University of Kansas, and his M.D. degree at the University of Kansas in 1950. He specializes in internal medicine.

Ernest E. Weinand, M.D., 902 Edmond St., St. Joseph, has become a member of Buchanan County Medical Society. Dr. Weinand is a native of Cape Girardeau, Missouri, received his preliminary education at Central Methodist College, and his M.D. degree at St. Louis University in 1957. He specializes in surgery.

Roy A. Westerfeld, M.D., 115 Clay St., St. Charles, has become a member of Lincoln-St. Charles County Medical Society. Dr. Westerfeld is a native of St. Charles, Missouri, received his preliminary education at Washington University, and his M.D. degree at the University of Missouri in 1959. He specializes in pediatrics.

John H. Woodbridge, M.D., 6150 Oakland, St. Louis, has become a member of St. Louis Medical Society. Dr. Woodbridge is a native of Arbo, Mississippi, received his preliminary education at Canton, Mississippi, and his M.D. degree at Tulane University in 1940. He specializes in internal medicine.

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MISSOURI SOCIETY OF MEDICAL TECHNOLOGISTS

MISSOURI ASSOCIATION OF BLOOD BANKS

Eighteenth Annual Convention

April 4, 5, 6, 7, 1965

April 4, 1965, St. John's Mercy Hospital Conference Rooms, Gymnasium

2:00 p.m. Business Meeting, Missouri Society of Medical Technologists.

6:00 p.m. Buffet Supper, Cafeteria.

8:00 p.m. Business Meeting, Missouri Association of Blood Banks.

CHASE-PARK PLAZA HOTEL, STOCKHOLM ROOM

April 5, 1965

9:00 a.m. Invocation, Rev. Richard P. Ellerbrake, Assistant Administrator, Deaconess Hospital, St. Louis.

9:05 a.m. Addresses of Welcome, Thomas J. Cooper, M.D., Retiring President, Missouri Association of Blood Banks; Beverly Fiorella, MT(ASCP), President, Missouri Society of Medical Technologists.

9:10 a.m. Erythroblastosis fetalis, G. Lowther, M. D.

9:45 a.m. Indications and Techniques of Intrauterine Transfusions: Eugene F. Tucker, M.D., Director of Laboratories, St. Mary's Hospital; Associate Professor, Department of Pathology, St. Louis University School of Medicine, St. Louis.

10:10 a.m. Question and Answer Period.

10:30 a.m. Coffee Break. View Exhibits.

11:00 a.m. H and I Blood Group Systems, Virgil Bleisch, M.D., Pathologist, St. Elizabeth Hospital, Belleville, Illinois.

11:30 a m. Question and Answer Period.

2:30 p.m. Appropriate Use of Blood Fractions in Hemorrhagic Disorders, Fedor Bachman, M.D., Department of Medicine, St. Louis City Hospital.

2:30 p.m. Agar Gel Hemoglobin Electrophoresis—A Rapid Technique Using Microscope Slides, Robert W. Brangle, M.D., Assistant Pathologist, Deaconess Hospital, St. Louis.

3:00 p.m. Coffee Break. View Exhibits.

3:30 p.m. Hemophilia, J. D. Bouhassin, M.D., Cardinal Glennon Hospital, St. Louis.

4:00 p.m. Question and Answer Period.

6:30 p.m. Social Hour.

7:30 p.m. MSMT-MSP Banquet, Colony Motor Hotel, Clayton.

April 6, 1965

9:00 a.m. A New Method of Data Processing, George E. Gantner, M.D., Director of Laboratories, Firmin Desloge Hospital; Associate Professor, Department of Pathology, St. Louis University School of Medicine, St. Louis.

9:45 a.m. Understanding Chromosome Analysis, Clarita L. Hampton, B.S., MT(ASCP), St. Mary's Hospital, Kansas City, Missouri.

10:00 a.m. Coffee Break. View Exhibits.

10:30 a.m. Diseases in Animals Transmitted to Man, Malcolm McGavern, Department of Pathology, Washington University, School of Medicine, St. Louis.

11:00 a.m. To be announced.

2:00 p.m. Immuno-Pregnancy Tests, Mary Schneidermeier, MT(ASCP), Department of Microbiology, St. Mary's Hospital, St. Louis.

2:15 p.m. PKU Determinations, Raymond Gray, Ph.D., Microbiologist, Clinical Laboratories, St. Louis.

2:45 p.m. Coffee Break. View Exhibits.

3:15 p.m. (Subject to be announced.) Department of Microbiology, Hyland Laboratories, Los Angeles, California.

April 7, 1965

9:00 a.m. Thin Layer Chromatography, L. E. Loveless, Ph.D., Biochemist, Clinical Laboratories, St. Louis.

9:30 a.m. T_3 Determinations, Thomas J. Cooper, M.D., Cooper Medical Laboratories, Clayton.

10:00 a.m. Coffee Break. View Exhibits.

10:30 a.m. Special Isotope Procedures, John Gantz, M.D., Director, Department of Nuclear Medicine, St. Mary's Hospital, St. Louis.

11:00 a.m. Seminar on Clinical Enzyme Determinations, Dan Trumbetta, General Diagnostics Division, Warner-Chilcott Laboratories, Morris Plains, New Jersey.

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FOR SALE—General Practice established 18 years. . . . Above average clientele. Ideal for G.P. with surgical experience or General Surgeon. Progressive town of 9,000, 50 miles southwest of St. Louis. Accredited, open staff 125 bed hospital. Will introduce. Liberal terms. Contact Box 310, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

HOUSE AND OFFICE FOR SALE—Six room residence with adjoining three room office in northern part of St. Louis County, outside of city limits. Located here for 37 years. Retiring. For further information, contact Box 312, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

FOR RENT—Desirable well located office in Fulton, Missouri, a city of 11,000; Westminster and William Woods Colleges; Factories, Parks; swimming pools. Accredited eighty bed hospital, open staff. Retiring. Contact R. N. Crews, Fulton, Missouri.

WANTED—Associate in General Practice in a two-man Modern Clinic Building. Town of about 7,000 in Missouri Ozarks. Modern hospital available. Contact Rollin H. Smith, M.D., West Plains, Missouri.

FOR SALE—Complete office equipment, including 200 M.A. Picker X-Ray with motor driven table and fluoroscope. Will sacrifice. Sell all or part. Located in Southwest Missouri. Contact George Hobbs, M.D., 1601 Parkview, Rockford, Illinois.

PHYSICIAN seeks position as industrial physician or medical examiner for insurance company, preferably Kansas City or St. Louis area. Contact Box 313, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

WANTED—Full-time industrial physician for East Central Iowa industrial plant. Excellent opportunity. General Practitioner preferred, salary open. Immediate opening. Please write Box 314, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

WANTED—General Practitioner to associate in Group Practice. Modern office facilities and accredited hospital. Adequate guaranteed income to start and increases leading to full partnership. Contact Eugene B. Robichaux, M.D., Excelsior Springs, Mo.

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good reason for good results in respiratory tract infections—broad antibacterial range, fast action

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unique properties make the difference in difficult or routine ca

The large variety of bacterial infections peculiar to the respiratory tract with their often acute episodes requires an antibiotic that combines broad-spectrum effectiveness with prompt, dependable serum levels. In addition to these benefits, Terramycin Intramuscular Solution is generally well tolerated at the injection site. All three advantages are dramatically illustrated in a study[1] of 119 children severely ill with a variety of bronchopulmonary infections. In this study, in which rapid, high levels were needed to initiate treatment, results were recorded as good in 107 and fair in 12. Terramycin Intramuscular Solution was used initially; oral Terramycin was used for follow-up therapy.

Terramycin Intramuscular Solution has proved a valuable component of total antibiotic therapy. Moreover, only Terramycin, among the broad-spectrum antibiotics, is available as a *preconstituted* solution for I.M. use. Always ready for imme injection, it requires no refrigeration and re stable for at least two years. This is one of a range of practical dosage forms for virtually therapeutic need in the treatment of susce respiratory tract infections.

No other single broad-spectrum antibiot been more widely employed in such a variety of infections—common or difficult—c by gram-positive or gram-negative bacteria chetes, rickettsiae, protozoa and large viru well as bacteroids and *Enterobius vermicularis*

Ahead of its time for 14 years, Terra remains a broadly effective and dependab biotic with a fine record—confirmed by mor 6,000 published papers. Moreover, the inci of serious adverse effects has been remarkab

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1. Nathan, L. A.: Exhibit presented at Mich. Acad. Gen. Pract., Detroit, Mich., Nov.

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recautions applicable to intramuscular injection should
arefully observed. Intramuscular solutions should be in-
d well within the body of a relatively large muscle, such
e upper outer quadrant of the buttock or the lateral thigh;
ot inject into the lower or middle thirds of the upper arm.

Care should always be taken to avoid injecting into a blood vessel or major nerve. Subcutaneous or fat-layer injection should be avoided.

Adverse Reactions: Nausea, diarrhea, glossitis, stomatitis, proctitis, vaginitis and dermatitis, as well as reactions of an allergic nature, may occur but are rare.

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*All potencies listed are in terms of the standard, oxytetracycline

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County Society News

FIRST DISTRICT

COUNCILOR, JOSEPH FISHER, M.D., ST. JOSEPH

Buchanan County Medical Society

The Buchanan County Medical Society and Auxiliary held their January meeting jointly at a dinner at Hotel Robidoux on January 6. Sixty-eight doctors and ladies were present. Separate business sessions and programs followed the dinner. Dr. Herbert C. Senne presided at the Medical Society and Mrs. E. F. (Lillian) Butler, at the Auxiliary meeting. The Medical Society program was a clinical pathological conference presented by Dr. Allen I. Herman. Radiological findings were given by Dr. R. Phillip Acuff, and pathological results by Dr. Richard V. Riddell, who also served as moderator for the conference. Mr. Wendell Lawrence provided the program for the Auxiliary with a discussion on investments.

Berwyn H. Moen, M.D., *Secretary*

Grand River Medical Society

The Grand River Medical Society and Auxiliary held their first monthly meeting of 1965 at the Strand Hotel in Chillicothe, on Thursday evening, January 14. There were 32 members and four guests present. Following a social hour and dinner the Medical Society and Auxiliary held their respective meetings.

Robert Froelich, M.D., of the Department of Psychiatry, University of Missouri Medical School, gave a very interesting and informative discussion on Psychiatry in General Practice. The discussion dealt mainly with doctor-patient communication, and was very well received.

At the business meeting delegates and alternates to the Annual Session of the MSMA were appointed.

Albert D. Cross, M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR, PAUL H. ROTHER, M.D., ST. CHARLES

Lincoln-St. Charles County Medical Society

Office and speakers at Lincoln-St. Charles County Medical Society meeting. (l. to r.) Paul H. Rother, District Councilor; Gerald A. Yaeger, Secretary; Paul T. Berry, President; and Charles R. Gulick, scientific speaker of the evening.

Charles R. Gulick, M.D., St. Louis, spoke before a dinner meeting of the Lincoln-St. Charles County Medical Society and the doctor's wives in Wentzville, January 26. The subject of his discussion was, "Hypogastric Artery Ligation—A Life-Saving Procedure." Slides were used to illustrate this well presented subject. A general discussion period followed the formal presentation.

While the doctors were listening to the scientific program, the ladies retired to a separate meeting of their newly formed Auxiliary.

After the scientific lecture, a regular business meeting of the medical society was held. Matters which will come before the House of Delegates of the MSMA at its meeting in April were considered. The advisability of a Program Committee being appointed for the purpose of planning the society's programs as much as six months to a year in advance was presented and discussed at considerable length. The President was requested to appoint such a committee at the February meeting of the Society.

In addition to the guest speaker, Ray McIntyre, Field Secretary of the State Association was a guest. The total attendance including doctors, their wives and guests numbered 35.

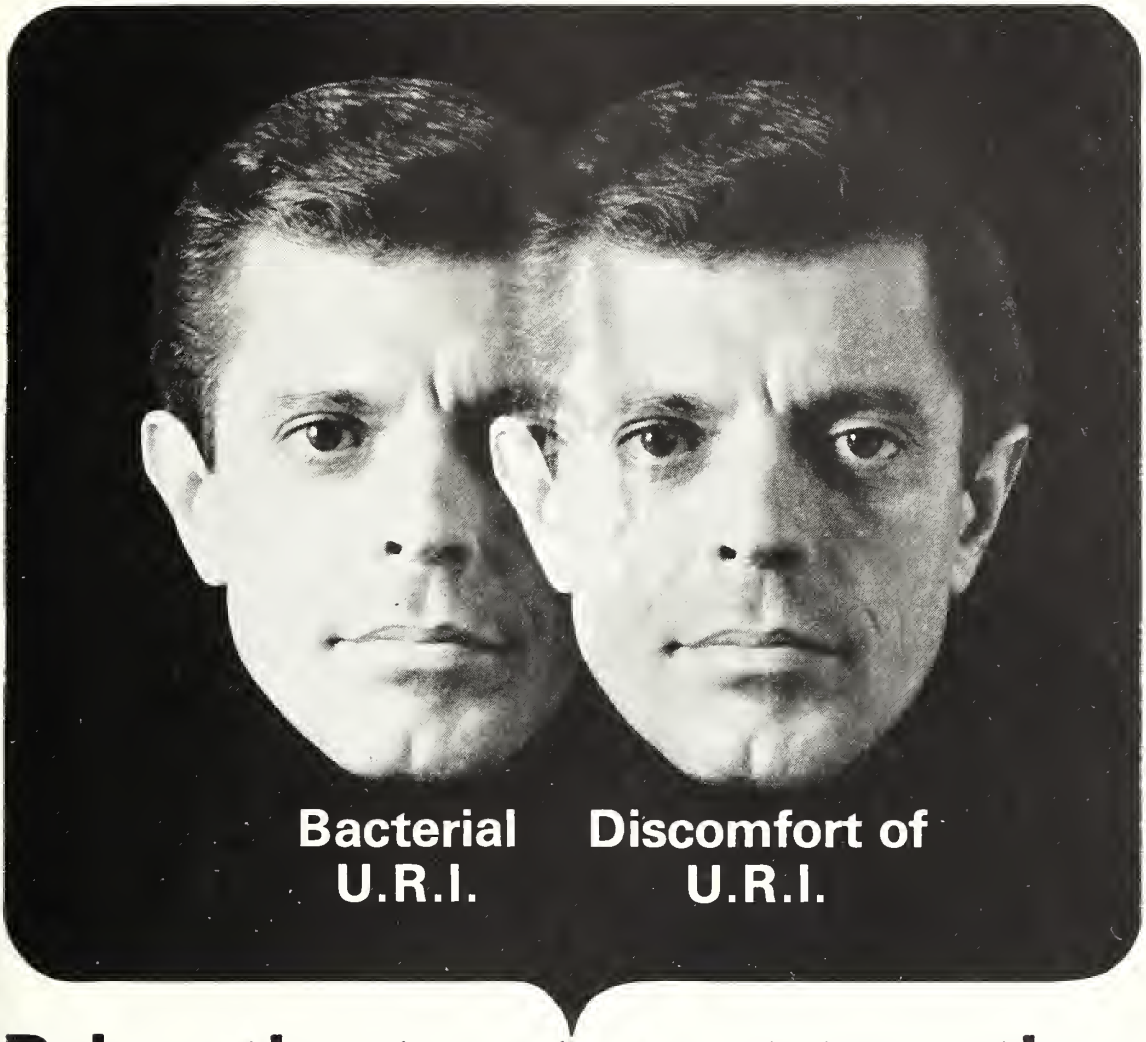
Gerald A. Yaeger, M.D., *Secretary*

SIXTH DISTRICT

COUNCILOR, ROLLA B. WRAY, M.D., NEVADA

West Central Missouri Medical Society

The West Central Missouri Medical Society met in Harrisonville, Thursday evening, January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ACHROMYCIN® Tetracycline HCl	125 mg.	Caffeine	30 mg.
Acetophenetidin (Phenacetin)	120 mg.	Salicylamide	150 mg.
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14, 1965. Total attendance—doctors, wives and guests—was 24. There was a very pleasant social hour and dinner preceding the meeting of the Society.

The scientific portion of the program was presented by Pat A. Barelli, M.D., ALR, Kansas City, who discussed, "Your Nose Problems and Mine." His talk was most informative and was enjoyed by all members present. Dr. Jack Moody, a member of the Society formerly living in Harrisonville but now a medical missionary in India, was presented to the group by President Love. Dr. Moody is in the United States because of a medical problem in his family. At the request of Dr. Love he made a few remarks to the Society about his work in India and expressed his pleasure about being back with the group again.

Following the scientific program, President Love called for the business meeting of the Society. The minutes of the December meeting were read and approved. Dr. Love reminded the membership of the committee announcements and requested a meeting of the Membership Committee immediately after the Society meeting adjourned. A communication from MSMA Executive Office concerning the matter of moving the office from St. Louis to Jefferson City was discussed. Dr. Luter moved that the delegates from the West Central Missouri Society be instructed to vote to retain the present status of the MSMA Office. The motion was seconded by Dr. Barger and was unanimously approved.

Dr. R. B. Wray, councilor of the sixth district, announced there would be a councilor district meeting in Sedalia, Wednesday, February 17. There was a discussion among the members of the Society as to advisability of holding a Society meeting in February in face of the councilor district meeting. This decision was left to the Program Committee.

ROY W. PEARSE, JR., M.D., *Secretary*

NINTH DISTRICT

COUNCILOR, E. A. STRICKER, M.D., ST. JAMES

MID-MISSOURI COUNTY MEDICAL SOCIETY

A dinner meeting of the Mid-Missouri County Medical Society and the doctors' wives was held January 28, in Lebanon. The evening festivities began with a social hour, followed by dinner and then a talk by Marion Stephens, Ph.D., Southwest Missouri State College of Springfield.

(Continued on page 241)

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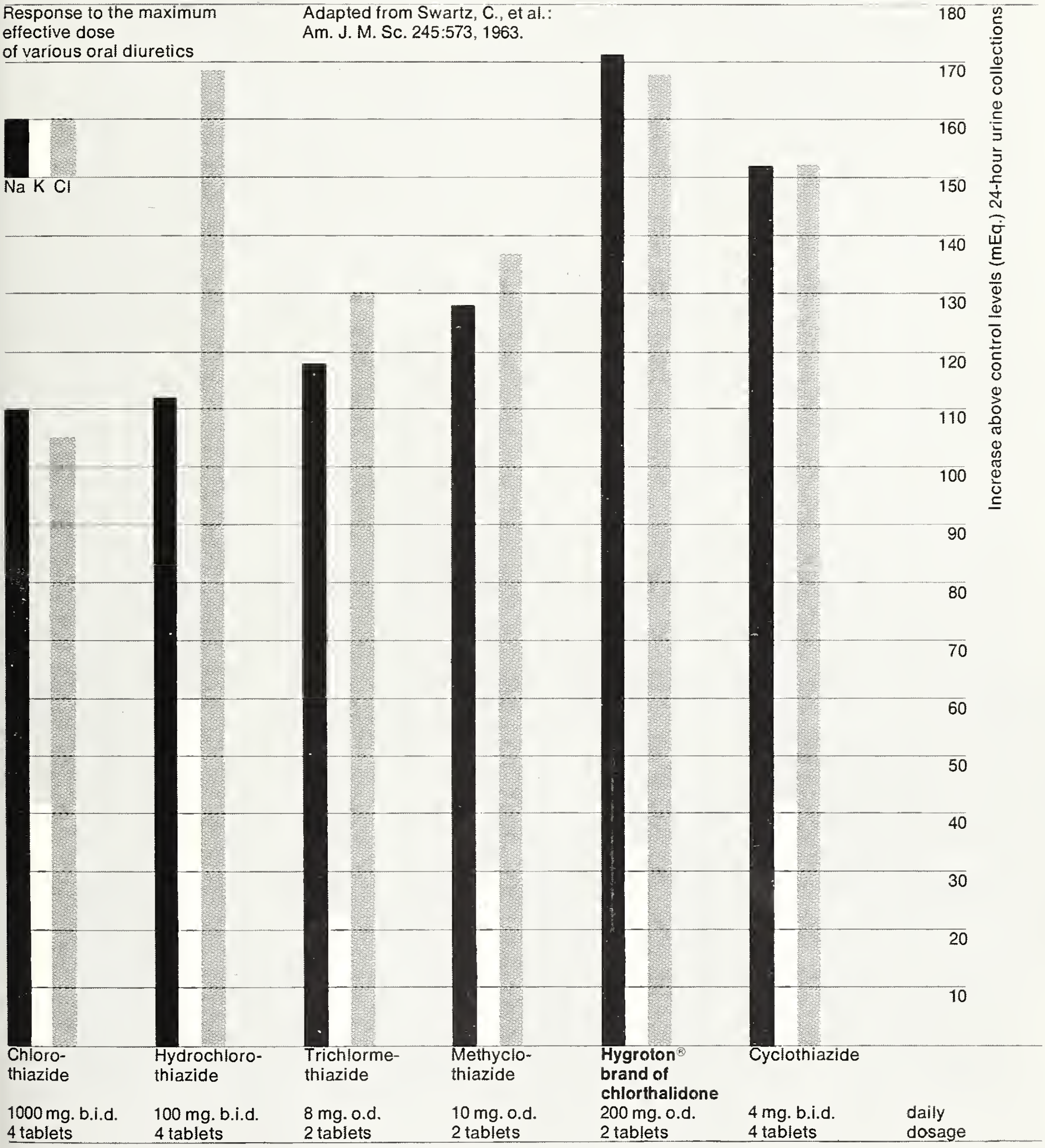
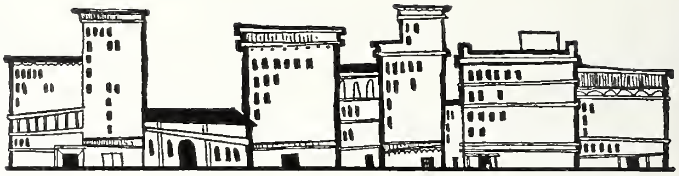


Response to the maximum effective dose of various oral diuretics

Adapted from Swartz, C., et al.: Am. J. M. Sc. 245:573, 1963.

From the Medical Schools



UNIVERSITY OF MISSOURI

Former Gov. John M. Dalton broke ground January 8, 1965 for the Mid-Missouri Mental Health Center at the University Medical Center. The ceremony took place at the site of the new Center, west of the University Hospital, following an indoor program which was presided over by Russell W. Sexton, chairman of the State Mental Health Commission. A salutation was given by Dr. George A. Ulett, director of the State Division of Mental Diseases; and Dr. Vernon E. Wilson, dean of the School of Medicine, responded.

The new building is expected to be completed in 1966, providing a 120-bed intensive treatment center for mental patients. The Center will be linked closely in its operations with existing facilities. Dr. William H. Anderson, associate professor of psychiatry, will serve as superintendent of the Center, and members of the Medical School staff will direct educational programs.

A doctor and a nurse at the M.U. Medical Center have pooled their professional experience and research to write a 248-page "Disaster Handbook." The book, published by Springer Publishing Company, Inc. of New York, presents basic concepts of disaster prevention and the care of disaster victims.

The co-authors are Dr. Solomon Garb, associate professor of pharmacology, and Mrs. Evelyn Eng, R.N., director of nursing service at the University Hospital and assistant professor of nursing. Dr. Garb's concern with disaster problems dates back to his service as an Army surgeon in the Philippines in 1945. A series of papers on medical aspects of disasters, which he prepared for MISSOURI MEDICINE two years ago, attracted considerable attention nationally. Mrs. Eng has done extensive study on the nursing aspects of disasters.

ST. LOUIS UNIVERSITY

Two major appointments at the Saint Louis University School of Medicine have been announced.

Dr. H. Waldo Bird assumed new duties as professor of psychiatry and associate dean at the Saint Louis University School of Medicine on January 15. Dr. Bird came from the University of Michigan where he was associate professor of psychiatry and former assistant dean.

His primary responsibility under Dr. Robert H. Felix, dean of the University's School of Medicine, will be student admissions.

Dr. Arthur E. McElfresh has been appointed professor of pediatrics, director of the Department of Pediatrics, and Medical Director of Cardinal Glennon Memorial Hospital for Children. He presently is associate professor of pediatrics at Temple University School of Medicine, and director of the Clinical Research Center at St. Christopher's Hospital for Children in Philadelphia. He will assume his new post on May 1.

A pediatric hematologist, Dr. McElfresh has been actively engaged in research problems concerned with blood coagulation and blood clotting, particularly in the newborn.

A Saint Louis University scientist and his research associate have utilized a new scientific principle to develop a portable fluid pump with no moving parts. It was designed for use as a pump in heart operations.

The pilot model was developed by Dr. Alfred Richardson, professor of physiology, and Mr. Sumoy Guha, a graduate student from Patna, Bihar, India. They reversed the conventional principle of passing a conductor fluid like blood or salt water through a magnetic field to produce electricity. Instead, they passed electricity through a magnetic field forcing the fluid to move.

WASHINGTON UNIVERSITY

Dr. John W. Josse has been appointed professor and head of the department of physiology at Washington University School of Medicine. The appointment is effective July 1, 1965. Dr. Josse has been associated with the School of Medicine since July 1963. He will succeed Dr. Harvey L. White, emeritus professor of physiology, who has been head of the department since 1948.

Dr. Josse previously was a research fellow working in association with Nobel Prize winner Arthur Kornberg both at Washington University and Stanford University, where he did chemical and statistical analysis of the structure of DNA. During the past year and a half Dr. Josse has isolated the enzyme pyrophosphatase from bacteria and crystallized the protein.

Dr. Ronald Singer, professor of anatomy and anthropology at the University of Chicago, presented the 13th Robert J. Terry Lecture at Washington University School of Medicine on February 4.

Dr. Singer, who received his education in South Africa, discussed steatopygia. The relationship of the disease to diet was discussed.

The Terry Lectureship was named in honor of Dr. Robert J. Terry, emeritus professor of anatomy. He headed the department of anatomy at Washington University School of Medicine from 1900 until his retirement from teaching in 1941. Dr. Terry now lives in Weston, Massachusetts.

County Society News (cont'd.)

Dr. Stephens used as his subject, "Processes of Teaching and Learning, 'How We Teach.'" Following the formal talk a number of interesting questions were directed to the speaker from members of the audience.

M. K. Underwood, M.D., *Secretary*

TENTH DISTRICT

COUNCILOR, W. D. ENGLISH, M.D., CARDWELL

Dunklin County Medical Society

George W. Eggers, Jr., M.D., of Columbia, Associate Professor, Department of Surgery (Anesthesiology) at the University of Missouri School of Medicine, spoke before a dinner meeting of the Dunklin County Medical Society at Kennett on January 19. Dr. Eggers spoke on "Effects of Commonly Used Drugs for Preoperative and Postoperative Medication." His interesting presentation stimulated a good general discussion by those in attendance following his formal talk.

Members of the Academy of General Practice who attended this program received credit toward their study requirements of the AAGP.

Quinton Tarver, M.D., *Secretary*

Mineral Area Medical Society

The Mineral Area Medical Society met at the State Hospital in Farmington on Thursday night, January 28. The scientific portion of the meeting was cancelled because inclement weather in the St. Louis area prevented the speaker from coming. Fifteen members and guests were present for the business meeting.

The status of Operation Hometown was reviewed, and it was decided to continue on the present basis with the Society secretary handling the necessary correspondence.

The problem of application for new membership was discussed. The motion was made by Dr. F. R. Crouch and seconded by Dr. C. H. Appleberry that applicants for new membership will attend at least one meeting before action can be taken. This motion was passed without opposition. In view of this motion, it was decided to take no action on the pending applications of Dr. James Vester and Dr. Sue Marten. Other applications are expected from Dr. Stanton Hardy, Dr. Robert Dettmer, and Dr. Bryan Michaelis. It was suggested that the name of Jonas Tejero, M.D., of the staff of the State Hospital be added to the mailing list.

Retus Osborne, M.D., the Director of the Farmington State Hospital, discussed a tutorial training program in psychiatry for family physicians, using the resources of the Hospital, which will soon be initiated at that institution.

Dr. Appleberry discussed the difficulty of arranging direct admissions at the State University Hospital in Columbia, relating the experience with an acutely ill patient who was told she would be placed on a waiting list of some two weeks duration before she could be admitted. The membership requested that the Secretary contact Dean Wilson of the Medical School for more information about admission procedures. In view of the meeting of the State Association in early April, it was felt that there should be no meeting of the Society that month.

It was noted that two active members have left the area; William Patton, M.D., of Ironton moving to San Marino, California and Marvin Haw, M.D., of Bonne Terre, moving to Columbia, Mo.

C. W. Chastain, M.D., *Secretary*

JOHN CROWE, M.D., Secretary

Missouri Academy of General Practice

Committees for the present year have been appointed by the President of the Missouri Academy of General Practice, Doyle C. McCraw, Bolivar. The Committees follow:

Education: A. G. Karraker, Farmington, Chairman; William Rost, St. Joseph; Stanley Roper, Ozark; R. L. Palenske, Hornersville; Lester Wolcott, Columbia; Wyeth Hamlin, Hannibal; A. J. Graves, Mt. Vernon; Harold D. Lankford, Mexico; Walter Stelmach, Kansas City; Charles Ladd, St. Louis.

Hospital: Walter Gray, St. Louis, Chairman; John M. Haight, Kansas City; Edward Campbell, Cape Girardeau; Scott Benson, St. Joseph; Earl D. Russell, Springfield; Donald Shull, Jefferson City; Thomas Fischer, Hannibal.

Finance: John Crowe, Cape Girardeau, Chairman; Wilbur A. Mullarky, St. Louis; C. Gordon Stauffacher, Sedalia.

Nominating: Edson C. Carrier, Kansas City, Chairman; Walter T. Gunn, St. Louis; Roy Pearse, Jr., Nevada.

Medico-Legal: C. A. McBurney, Slater, Chairman; G. A. Schulte, Joplin; Luke A. Knese, St. Louis; Lawrence Epple, Mexico; Herbert Rudi, St. Louis; Eugene Robichaux, Excelsior Springs.

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For those coming a day early to the Annual Session of Missouri Medical Association a new and different party has been planned by the St. Louis Academy of General Practice. Nothing like it has ever been attempted in St. Louis. The well-known theatrical agent, Ted Tillman, has arranged a big Polynesian night at the huge Mayan ballroom of Bel-Air East. This new motel is at 4th and Washington Streets and accommodates 450 people. The date is Saturday, April 3, at 6:00 p.m. Mr. Tillman has engaged a seven-member troupe of Hawaiians from Chicago for music and South Sea Island entertainment. The food will be Polynesian and Chinese by Trader Vic's Restaurant located in the same building. Steak dinners will also be available.

The show will be similar to the one seen at the International Village at Waikiki Beach or at the Hawaiian Room at the Lexington Hotel in New York City. All the 300 South Sea Island doctors around St. Louis have been invited. Hawaiian shirts and dresses can be worn. Coats and ties are also acceptable. The price of tickets is $10.00 per person, and there will be a cash bar. Write to Miss Eleanore Schmied, St. Louis Academy of General Practice, 3839 Lindell Boulevard for tickets, and enclose a check. Reservations are limited to 450 people. The first 450 tickets sold will be it!

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General Topic: Cancer Therapy - Newer Approaches

Wednesday, April 7, 1965, 3:30 to 8:30 p.m. --
St. Louis Medical Society Bldg., 3839 Lindell Blvd.

AGENDA

Indications for Prophylactic Groin Dissection --
John S. Spratt, Jr., M.D., F.A.C.S., Chief Surgeon,
Ellis Fischel State Cancer Hospital, Columbia, Mo.

Pre-Operative Radiation Therapy --
William E. Powers, M.D., Director, Radiation Dept., and
Assoc. Professor of Radiology, Mallinckrodt Institute of Radiology

Current Uses of Radioisotopes in Cancer Therapy --
George E. Thoma, M.D., Dept. of Internal Medicine,
St. Louis University, Firmin Desloge Hospital

-- FIFTEEN MINUTE BREAK --

Cancer of the Oral Cavity --
Louis T. Byars, M.D., Associate Professor,
Clinical Surgery, Washington University

Supporting Role of the Dentist in Management of the Oral Cancer Patient --
Joseph L. Bernier, D.D.S., Maj. General, D.C.
Asst. Surgeon and Chief, Dental Corps, U.S. Army

-- COCKTAILS AND DINNER --
6:00 - 7:30 p.m.

Preventable and Avoidable Cancers --
Wendell G. Scott, M.D., Professor, Clinical Radiology,
Washington University; immediate past president,
American Cancer Society; editor, "Cancer" journal

-- QUESTIONS, DISCUSSIONS --

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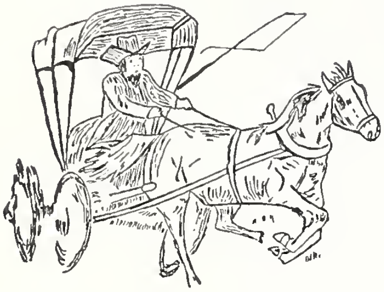
Missouri Medicine in Review



FORTY YEARS AGO

During the past few years much has been written in foreign countries on the treatment of whooping cough by intramuscular injections of ether. The results published by these men seem to justify its use in certain cases where the ordinary methods fail to relieve the distressing symptoms.—Considerable consternation agitated the medical profession recently when it became known that the Eleemosynary Board had been called upon to displace the steward at State Hospital No. 2, St. Joseph, and the steward at State Hospital No. 3, Nevada, in order to make room for persons friendly to Governor Baker.—Having come into possession of what it believes to be satisfactory evidence that a number of persons have obtained licenses to practice medicine upon false and fradulent statements, the State Board of Health has issued citations to 60 doctors to appear before the Board at St. Louis on March 16 to show cause why their licenses should not be revoked.

The final meeting of the Clay County Medical Society for 1924 was held at the Major Hotel in Liberty, December 18. The weather was almost prohibitive, being below Zero, yet about 20 members and wives gathered around the festal board, presided over by Dr. J. H. Rothwell. A magnificent tribute for medical marksmanship was given to Dr. Rothwell and Dr. Baird for the wild duck and roast mallard, served to each guest.

TWENTY-FIVE YEARS AGO

The Annual Spring Medico-Military Symposium will be presented in Kansas City, March 14 and 15, by the Kansas City Southwest Clinical Society in conjunction with the Seventh Corps Area, United States Army and Ninth Naval District.

Missouri's new Trachoma Hospital at Rolla was opened officially in January. Built at a cost of $136,000, the new hospital will accommodate 65 patients. Treatment at the Hospital is free, the patients receiving room and board as well as medical treatment. The new building, which is the only one ever to be constructed for the exclusive treatment of trachoma, was made possible by a grant from the State Legislature and the WPA.

TEN YEARS AGO

"Dr. Andy Day" was celebrated at Mount Vernon, Illinois, on January 8, the 90th birthday of Dr. Andy Hall, father of Andy Hall, Jr., M.D., St. Louis.—A special tribute was paid recently to L. E. Rolens, M.D., Granby, at a reception for faculty and school board members. Dr. Rolens has served 33 years as a school board member.—The St. Louis *Post-Dispatch* recently carried a picture and article about Walter B. Yost, M.D., St. Louis, who celebrated his 82nd birthday and retired after a 61 year medical career.

Freeman Hospital, Joplin, medical staff elected S. D. Papp, M.D., Joplin, president; and Lawrence S. Crispell, M.D., staff secretary.—St. Luke's Hospital Medical Staff Association, St. Louis, at a meeting on January 14, elected Otto S. Krebs, M.D., president; J. B. Clark, M.D., vice president, and Herbert C. Wiegand, M.D., secretary and treasurer.

Officers of the staff of St. Mary's Hospital, Kansas City, recently elected are William A. Staggs, M.D., president; Harry A. Underwood, M.D., secretary-treasurer; Michael Bernreiter, M.D., William M. Kitchen, M.D., and Robert M. Drisko, M.D., executive committee.

New officers of Sisters' Hospital, St. Joseph, are Robert W. Kieber, M.D., president; Harold J. Brumm, M.D., president-elect, and Lawrence H. Pifer, M.D., secretary-treasurer.

The Phi Beta Pi national medical fraternity awarded a citation to Milton D. Overholser, M.D., Columbia, at a banquet in St. Louis on December 30. The citation was for outstanding service to the fraternity.

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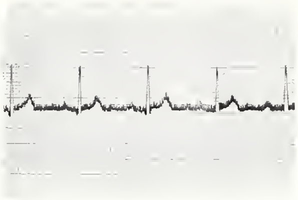

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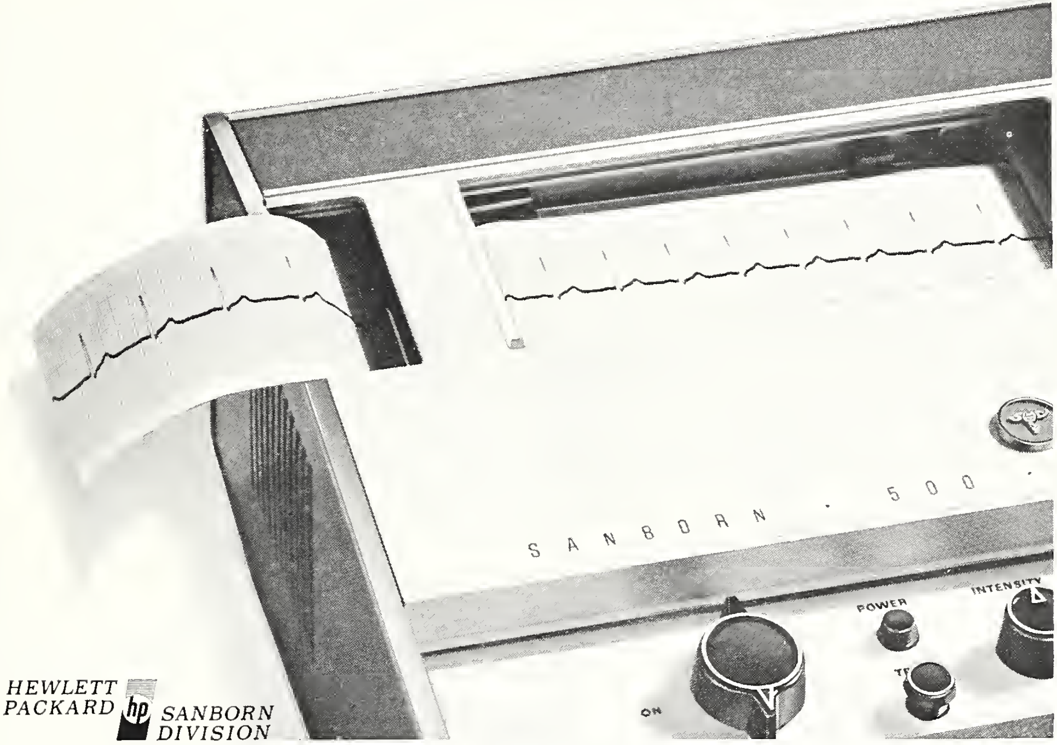

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County Society News

FIRST DISTRICT

COUNCILOR
JOSEPH L. FISHER, M.D., ST. JOSEPH

Buchanan County Medical Society

Sixty physicians and their wives attended the February meeting of the Buchanan County Medical Society, following a social period and dinner. The program was the annual heart program held each year by the society. Scientific speaker was Lewis E. January, M.D., Professor of Medicine and Chief Cardiologist at the University of Iowa Medical School, who spoke on, "The Course of Mitral Stenosis Before and After Surgery." The speaker was introduced by Dr. Lucien W. Ide. Presiding at the meeting was Dr. Herbert C. Senne.

The Auxiliary to the Society held a business meeting during the scientific program. Mrs. E. F. Butler presided at this meeting.

Berwyn H. Moen, M.D., *Secretary*

Grand River Medical Society

David G. Hall, M.D., Associate Professor and Chairman, Department of Ob-Gyn, University of Missouri Medical School, spoke at a meeting of the Grand River Medical Society and its Woman's Auxiliary in Chillicothe on Thursday night, February 11. Dr. Hall's subject was, "Pelvic Relaxation and Stress Urinary-Incontinence." A general discussion followed the formal presentation of this interesting subject.

After dinner, the Auxiliary met separately and had as the guest speaker, Mrs. Joseph Miquelon, who gave a résumé of new books, both fiction and nonfiction. Immediately preceding the dinner a moment of silence was observed in memory of Dr. Charles H. Cullers, Trenton, a long time member of the society who died February 10, 1965.

Albert D. Cross, M.D., *Secretary*

SECOND DISTRICT

COUNCILOR
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

The Chariton-Macon-Monroe-Randolph County Medical Society held a dinner meeting at the Woodland Hospital in Moberly on Thursday, February 11. The principal speaker for the evening was Larry L. Calkins, M.D., Kansas City, Kansas, Department of Ophthalmology, University of Kansas School of Medicine, who spoke on "Eye Emergencies."

In his discussion of serious eye problems, he indicated that one of the most serious is that of acid or alkali burns which, he stated, are often times not treated correctly. His presentation was well received by those present and stimulated a good general discussion.

Robert Hasson, M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR
PAUL ROTHER, M.D., ST. CHARLES

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society was held in St. Charles on Tuesday, February 23. The evening festivities began with a social hour followed by dinner and then the program. The scientific discussion of the evening was presented by Thomas Frawley, M.D., Professor of Medicine and Director of the Department of Internal Medicine, St. Louis University Medical School, who spoke on "The Early Signs of Endocrine Disorders." This was an interesting and well presented subject, producing numerous questions from the audience.

A reasonably good attendance was present on this occasion in spite of inclement weather.

Gerald Yaeger, M.D., *Secretary*

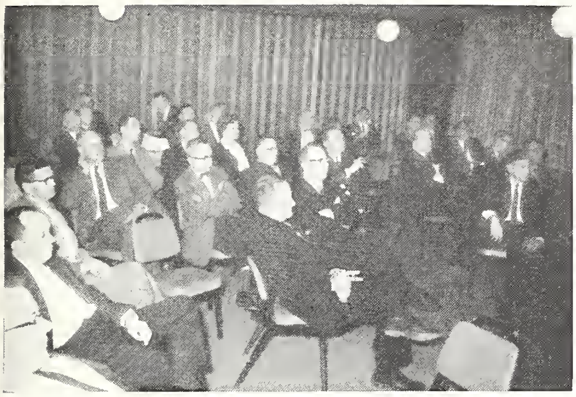
SIXTH DISTRICT

COUNCILOR
ROLLA B. WRAY, M.D., NEVADA

West Central Missouri Medical Society

The February meeting of the West Central Missouri Medical Society was held in Butler on Thursday, February 11. Total attendance, doctors, wives, and guests, was 14. There was a social hour followed by dinner and then the meeting of the Society.

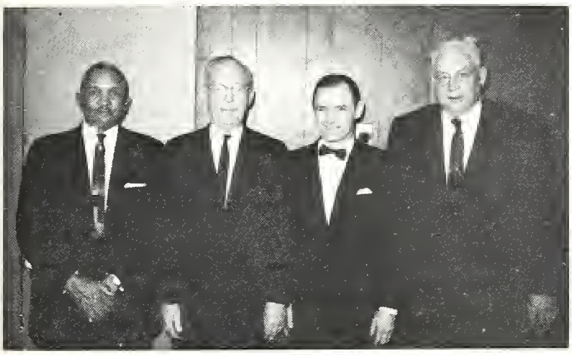
The scientific program was presented by Dr. Norman B. Asel, Columbia, whose topic was, "Superficial Dermatophytes." This was a very practical and informative discussion of the more common fungus infections of the skin and was greatly appreciated by all in attendance.



Physicians of the Sixth Councilor District concentrate on the scientific presentation during their recent meeting in Sedalia. The doctors and their ladies divided for separate meetings following their dinner.

Following the scientific program, the business meeting of the Society was called to order by the President, Dr. W. S. Love. The minutes of the January meeting were read and approved.

The membership was reminded of the Councilor District meeting to be held in Sedalia on February 17. It was announced that the March meeting of the Society will be held in El Dorado Springs. There being no further business, the meeting was adjourned.



Dr. A. R. Maddox (l), President of Pettis County Medical Society, served as host for the Sixth Councilor District meeting. Visiting dignitaries were: Dr. Leonard Furlow, President of MSMA; Dr. William R. Cole, St. Louis, guest speaker; and Dr. Rolla Wray, District Councilor.

Roy W. Pearse, Jr., M.D., *Secretary*

District Meeting

Members of the Sixth Councilor District and their wives held a dinner meeting on Wednesday, February 17, in Sedalia. A social hour preceded dinner and the formal program. Dr. A. R. Maddox, President of the Pettis County Medical Society, presided, introduced the special guests and then turned the meeting over to Dr. Rolla Wray, District Councilor.

The ladies held a separate meeting following dinner, with the program furnished by the Auxiliary of the Johnson County Medical Society, with a talk on "Styles of Architecture."

The scientific part of the program for the doctors was presented by William R. Cole, M.D., Assistant Professor of Surgery at Washington University Medical School and Chief of Unit I Surgery at St. Louis City Hospital. Dr. Cole spoke on "Prophylactic Antibiotics in the Practice of Surgery." Following his talk and a question period, the doctors were privileged to hear an excellent discussion on "Some Current Problems for Missouri Medicine," by Leonard T. Furlow, M.D., President of MSMA. Dr. Furlow gave a brief report on the recent special session of the House of Delegates of the AMA and made a plea for local educational efforts for the promotion of the Eldercare program, which the AMA is backing in the present Congress in opposition to the Medicare proposal. He also discussed a number of matters which will be considered by the House of Delegates at the Annual Meeting of MSMA in St. Louis, April 4-7. In his remarks, he discussed the real service being performed by the Missouri State Medical Foundation in providing loans for many Missouri residents who need assistance in completing their medical school training. Approximately 80 people including doctors, their wives and guests were in attendance. Pettis County Medical Society was pleased to have the privilege of being host at this fine meeting.

William J. Glass, M.D.,
Secretary, Pettis County

EIGHTH DISTRICT

COUNCILOR
DOYLE C. McCRAW, M.D., BOLIVAR

Ozarks Medical Society

The January meeting of the Ozarks Medical Society and the doctors' wives was held on Tuesday, January 12, in Monett. The scientific program for the evening was given by Charles Lockhart, M.D., of Springfield who spoke on, "Cancer of the Breast." The February meeting of the society and the doctors' wives was held on Tuesday night, February 9. This was a dinner session in Aurora. The scientific presentation was given by Charles Wilson, M.D., Director of the Neurosurgery Department, University of Kentucky. The subject of his discussion was "Head Injuries."

The March meeting of the society was held Tuesday night, March 9, in Mount Vernon.

PAUL B. ANDERSON, M.D., *Secretary*

TENTH DISTRICT

COUNCILOR
W. D. ENGLISH, M.D., CARDWELL

MINERAL AREA COUNTY MEDICAL SOCIETY

The meeting began with a presentation by Retus Osborn, M.D., Director of the Farmington State Hospital, on "The Changing Role of the Mental Hospital." The Vice President, Dr. J. A. Brennan, chaired the meeting.

After the reading of the minutes, Dr. Chastain discussed plans of the Steering Committee of the Oral Polio Immunization Drive to establish a trust fund with the proceeds from that drive, the income from the trust fund to be used in the field of public health in St. Francois county.

The membership discussed the proposal that the State Medical Association establish an office in Jefferson City. On motion by Dr. Taylor, and seconded by Dr. Oliver, the membership voted to instruct the delegates from the counties comprising the Mineral Area Medical Society to vote "No" on any proposed change in the location of the Association's central office—and to vote against the establishment of a branch office in Jefferson City.

Operation Hometown was discussed. A motion was made by Dr. Crouch, seconded by Dr. Carleton, that the secretary of the Society arrange for advertisements in the newspapers published in five counties served by the Society to explain the Society's position on Eldercare as opposed to the Medicare plan. This motion was passed unanimously.

Applications were pending from four potential members: James Vester, M.D., of Bismarck; Sue Marten, M.D., of Viburnum; Stan Hardy, M.D., of Desloge; and Robert Dettmer, M.D., of Ironton. The applications having been previously read, the doctors having fulfilled the requirement of attendance at at least one business meeting prior to action upon their application, and the applications having been approved by the Credentials Committee, all four physicians were accepted for membership in the Mineral Area Medical Society.

Members attending were: C. E. Michaelis, F. R. Crouch, Van W. Taylor, G. A. Oliver, G. L. Watkins, Retus Osborn, T. R. Burcham, A. G. Karraker, R. A. Huckstep, C. E. Carleton, J. A. Brennan and C. W. Chastain. Guests were B. E. Michaelis, James Vester and Sue Marten.

C. W. CHASTAIN, M.D., *Secretary*

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Hygroton®
brand of chlorthalidone

The long-acting diuretic

NegGram®

Brand of

nalidixic acid

Optimal initial adult dose: Two 500 mg. Caplets® four times daily

In the treatment of both acute and chronic urinary infections, NegGram affords outstanding advantages.

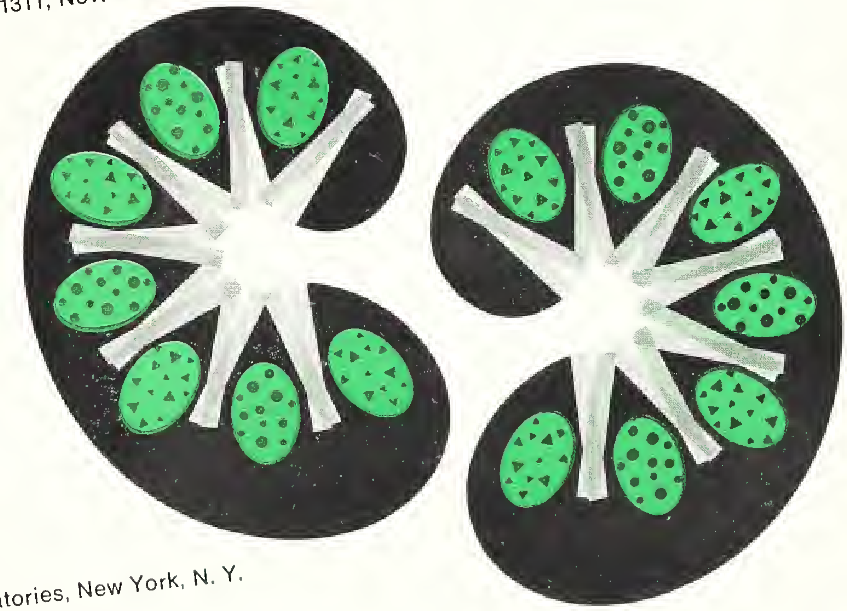
NegGram is highly effective against gram-negative organisms. Since it is devoid of bacterial cross-resistance, it has frequently proved successful in cases in which other agents had failed,[1,2] and is particularly distinguished by its effectiveness in stubborn, drug-resistant proteus infections.[3,4] NegGram has also produced favorable responses in some gram-positive infections.[3]

With NegGram, there is no need to regulate urinary pH. It may be used with other antibacterials in mixed infections. Moderate renal impairment is no contraindication to its use. Fungal superinfection, crystalluria, and neurotoxicity or nephrotoxicity have not been encountered.

Even in stubborn proteus infections ...often a favorable response

References: **(1)** Warres, H. L.: *Missouri Med.* 61:27, Jan., 1964. **(2)** Palmer, K. J.: *Week. Urol. Clin. Letter* vol. 6, no. 36, Dec. 24, 1962. **(3)** Carroll, G.: *J. Urol.* 90:476, Oct., 1963. **(4)** Ward-McQuaid, J. F. N. C.; Jichlinski, D., and Macis, R.: *Brit. M. J.* 2:1311, Nov. 23, 1963.

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.
Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, and mild eosinophilia. Marked overdosage coupled with certain predisposing factors has produced brief convulsions in three patients.
Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, the drug should not be given in the first trimester of pregnancy. Because NegGram is metabolized in the liver and excreted through the kidneys, it must be used cautiously in patients with liver disease or severe impairment of kidney function.** The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician.
Dosage: Adults: 2-4 Gm. daily by mouth in divided doses. *An initial daily dosage of 4 Gm. (2 Caplets of 500 mg. q.i.d.) is recommended for 1-2 weeks.* Thereafter, if further treatment is indicated, dosage may be reduced to 2 Gm. daily. Children may be given approximately *25 mg. per pound* of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.
How supplied: Buff-colored, scored Caplets® of *500 mg. for adults*, conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1,000. *250 mg. for children*, available in bottles of 56 and 1,000.



Winthrop

Winthrop Laboratories, New York, N. Y.

Ramblings of the Field Secretary

The Annual Banquet and Installation of Officers of the Green County Medical Society was held Wednesday, February 3, in Ozark, Mo. This year's dinner-dance, as a special feature, included entertainment by the "Greene County Boys" (recently returned from New York where they were featured on the "I've Got a Secret" television show). The evening activities began with a social hour followed by dinner and then a short formal program including remarks by the retiring president, Dr. Kenneth Knabb. Doctor Knabb presented the gavel to the incoming president, Dr. William Snead, who commented briefly on his plans for the current administrative year. The master of ceremonies for this part of the program was Dr. James T. Brown, the leader of the "Greene County Boys." Dr. Brown carried off the duties of the M.C. in his usual excellent fashion and set the proper stage for the special entertainment of the evening given by "The Green County Troubadours."

Councilor Doyle C. McCraw poses with the old and new officers of Greene County Medical Society. (l to r) Drs. McCraw, retiring president Kenneth Knabb, incoming president William Snead and president-elect William Johnson.

The Medical Hit Parade on this occasion presented a number of new offerings which were, as usual, received with great pleasure by those in attendance. This Medical Hit Parade gets better and better and it wouldn't be too surprising to see the "Greene County Boys" close their offices and enter the entertainment world on a fulltime basis, particularly if socialized medicine engulfs the land.

The Greene County Boys perform for colleagues and friends, showing no reaction to their recent exposure to that dread modern American disease, Televisionitis.

Approximately 350 people including doctors, their wives and guests attended this gala affair.

Raymond McIntyre

SPECIAL RATES FOR FAMILIES

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the summer resort with everything

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bring your FAMILY Our famous "kid sitters" supervise play 8 hours each day at no extra charge. SPECIAL RATES!

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Diner's Club
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BY DAY
Deer park Lodge is informal, go Golfing (FREE July and August), ride Horseback, Waterski, swim in a large, Heated/Glassed-in pool, or fish 'n cruise Manitowish Waters' famous "Chain Of Lakes." The accommodations are the finest. The food, it's "out of this world."

BY NIGHT
Deer park Lodge is gay and carefree, you can "live it up." Enjoy Cocktails, dancing, planned entertainment that's varied each evening. At 10:30, enjoy a fabulous Buffet/Snack. Then sleep as you've never slept before in Wisconsin's newest, smartest resort accommodations . . . Deer park's beautiful Beach Villa.

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MAIL THIS COUPON FOR COLORFUL BROCHURE
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Manitowish Waters, Wisconsin 54545

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In the Heart of Wisconsin's Beautiful Vilas County

medical melange

Notes of interest from Here . . . . and There

A visual-history project to create a medical library of video-taped interviews with famous doctors has begun at Columbia University in the New York State Psychiatric Institute, Columbia-Presbyterian Medical Center. Doctors there are producing television-taped, hour-long personal reminiscences by some of the world's most important pioneers in the field of psychiatry. The program may be extended to other medical specialties. The tapes will be available to students, doctors and historians.

New techniques, ideas and equipment are revolutionizing hospital nursing procedures and could reduce costs, Dr. Max Sadove, head of the department of anesthesiology, school of medicine of the University of Illinois, told a group of medical equipment experts at a meeting in Chicago. Dr. Sadove said that automation of hospitals will include use of sonic beams to check patients' pulse, blood pressure, etc., and installation of "consoles" in rooms, providing complete services—compressed air, oxygen and vacuum as well as television and radio monitors and outlets for performance of EKG and ECG tests without actually moving the testing equipment into the room.

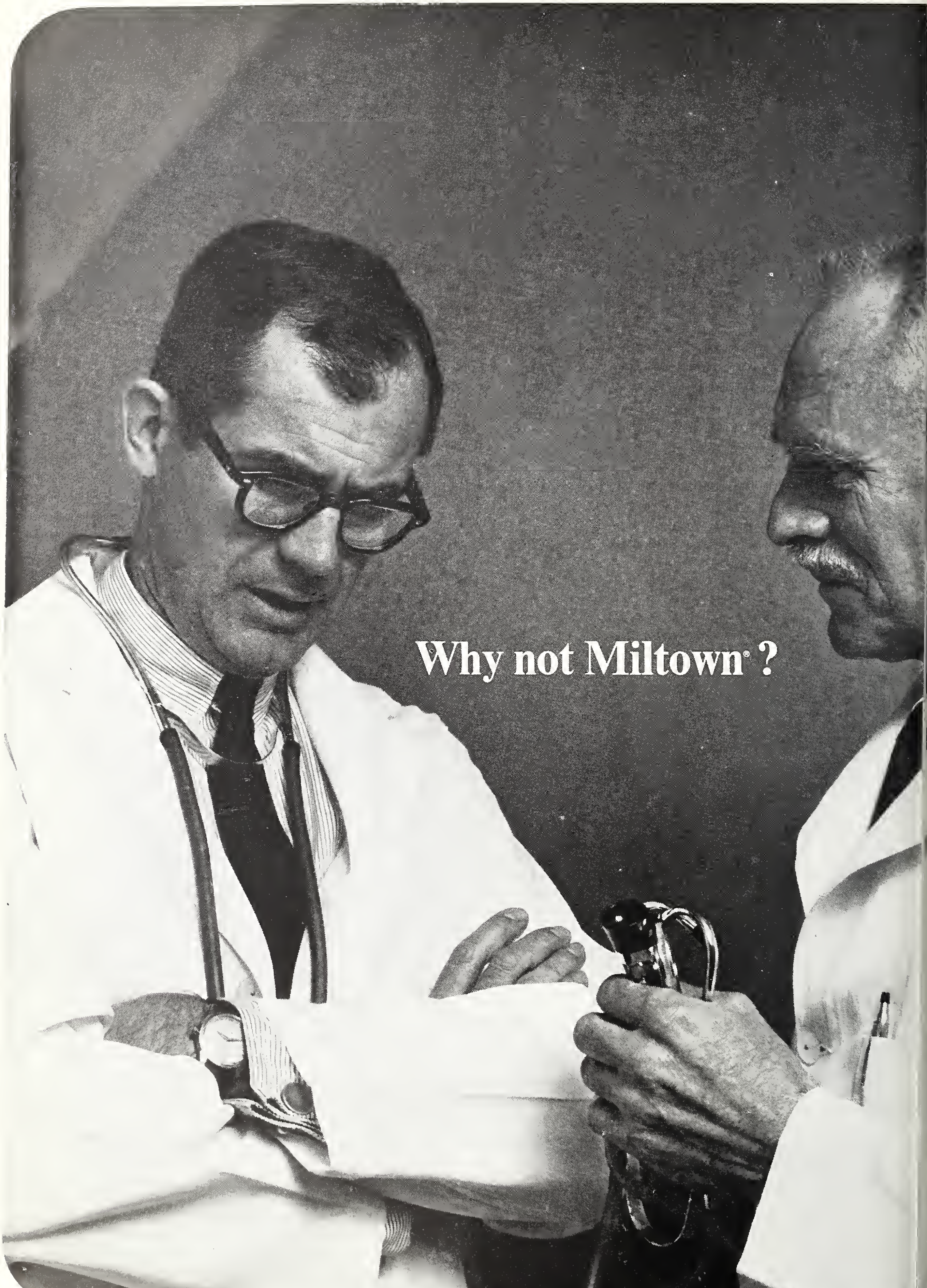
A St. Louis physician, A. N. Arneson, M.D., will assume the presidency of the American College of Obstetricians and Gynecologists during its 13th Annual Clinical Meeting in San Francisco, April 4-8. Doctor Arneson is a former President of St. Louis Medical Society and is professor of clinical obstetrics and gynecology and associate professor of clinical radiology at Washington University School of Medicine.

A. N. Arneson

Warner-Lambert Pharmaceutical Company and the Hallicrafters Company have announced a collaborative program to develop and market new products in the field of medical electronics. The first product to result from this partnership is the world's lightest and most compact, solid-state electrocardiograph. A built-in feature of this precision instrument is that its readings can be fed from the patient's heart through a special device that permits transmission over conventional telephone lines. Thus the physician performing the test can instantly consult with a specialist.

Striking success with a new approach to controlling staphylococcal epidemics in hospital nurseries was reported by a Cornell pediatrician at a conference on "Skin Bacteria and Their Role in Infection" at the University of California San Francisco Medical Center. The method: deliberate colonization of the newborn with a nonvirulent strain of Staphylococcus aureus before the epidemic strain can establish itself. It applies to clinical practice the recently reported phenomenon of "bacterial interference"—the rejection of new staphylococcus strains by tissues already colonized with others.

(Continued on page 266)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There are few "nots" in Miltown therapy

- **Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.**
- **The high safety-efficacy ratio of 'Miltown' has been demonstrated by more than a decade of clinical use.**

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

Supplied: In two strengths: 400 mg. scored tablets and 200 mg. coated tablets.

Before prescribing, consult package circular.

Miltown
(meprobamate)

WALLACE LABORATORIES / *Cranbury, N.J.*

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medical melange (cont'd.)

Plasmapheresis, a blood transfusion technique in which the cells are separated and returned to the donor's veins in a matter of minutes, is "an increasing source of plasma because of its simplicity and the growing need for the product." So report two Boston physicians, Dr. Allan Kliman of the Blood Grouping Laboratory and Dr. Mark Lesses of the Blood Bank and Transfusion Unit, in *Transfusion,* publication of the American Association of Blood Banks. While donors can donate whole blood only five or six times a year, they can give plasma via the new technique as often as once a week.

If all prenatal patients were screened for diabetes automatically, the 30% rate of stillbirths and infant deaths observed in untreated diabetic women—or those destined to become diabetic—might be sharply reduced, and dangers to the mother might be mitigated or avoided. Such testing, however, is "far from routine," says Dr. Elsie R. Carrington, Research Professor at the Woman's Medical College of Pennsylvania. This state of affairs exists despite the fact that pregnancy increases the body's demands on insulin so profoundly that it can be regarded as a built-in tolerance test, according to Dr. Carrington. These and other views on the effect of pregnancy on diabetes were expressed in an article for the current issue of *Diabetes—Research, Detection, Therapy*—a newsletter for physicians prepared by The Upjohn Company.

A fully automated process for testing blood has been put under computer control for the first time by the Kings County Research Laboratories, Inc., Brooklyn. An IBM 1710 computer is being used to monitor, calculate and speed the results of patient's blood tests back to physicians faster and with greater accuracy and reliability than ever before. The tests produce data on the functions of critical organs such as the liver, kidneys and thyroid gland. The tests also reveal the level of cholesterol in the blood.

A new antiseptic spray foam is markedly more effective than alcohol in discouraging bacterial growth in the umbilicus of the newborn, Col. John P. Fairchild, chief of pediatrics at Walter Reed General Hospital, reported recently at a University of California symposium on skin bacteria. In Col. Fairchild's study of 189 newborns, the spray foam was substituted for 70% alcohol in routine umbilical management of alternate babies. The spray contains 0.25% cetylpyridinium acetate and 2.25% dequalinium acetate in an aqueous vehicle containing 50% alcohol.

Seven more drugs have been added to the medications in Wyeth Laboratories' Unit Dose strip packaging. These additions expand the company's list of preparations available in single-dose packages to a total of 36 different pharmaceuticals, some in two, three, or four different strengths. Unit dose packaging of drugs reportedly has become widely accepted in hospitals to save time by eliminating the need for the nurse to prepare each dose separately.

Parke, Davis & Company has announced the introduction of a new therapeutic, high-potency vitamin. The new product, Thera-Combex H-P, combines 500 mg. of vitamin C with the therapeutic potencies of the B-complex vitamins and digestive enzymes to give a high-potency formula. Products of this type are prescribed to aid recovery of patients and promote tissue repair during and after infection or illness, following injury and before and after surgery.

MISSOURI STATE MEDICAL ASSOCIATION

Program

107th Annual Session—1965

Chase-Park Plaza Hotel, St. Louis
April 4, 5, 6, 7

Sunday, April 4

12:00 noon Registration of Delegates, *Exhibit Hall.*

1:30 p.m. House of Delegates meeting, opening session, *Chase Club.*

3:30 p.m. Reference Committee meetings.

6:30 p.m. Reception and Dinner, *Regency Room and Chase Club.* (Sponsored by the St. Louis County Woman's Auxiliary.)

6:30 p.m. Dinner Meeting, MSMA Committee on Diabetes and Missouri State Diabetes Association, *Stockholm Room.*
Speaker: Arnold Lazarow, M.D., Minneapolis, Minn.
Topic: Insulin Synthesis, Storage and Release.

Monday, April 5

8:00 a.m. Registration, *Exhibit Hall.*

8:30 a.m. Breakfast (Continental) and scientific session, *Chase Club.*
What's New in Viruses?—John W. Berry, M.D., St. Louis, moderator.
Fundamentals of Virus Structures and Replication—Maurice Green, Ph.D., St. Louis.
Relationship of Viruses to Cancer—Joseph L. Melnick, Ph.D., Houston, Texas.

10:30 a.m. Intermission to view exhibits, *Exhibit Hall.*

11:00 a.m. Scientific session, *Chase Club.*
Some Aspects of Vascular Diseases in Daily Practice—M. S. DeWeese, M.D., Columbia.

11:30 a.m. Scientific session, *Chase Club.*
Recent Progress in Diabetes Research and Its Relation to Treatment—Arnold Lazarow, M.D., Minneapolis, Minn. (Sponsored by the Missouri State Diabetes Association.)

12:00 noon Maternal Welfare Luncheon, *Regency Room.*

12:00 noon Fifty-Year Club Luncheon, *Park Room.*

2:00 p.m. Scientific session. (Medical.), *Chase Club.*
Abdominal Pain—Blaine Z. Hibbard, M.D., Kansas City, moderator.
Abdominal Pain of Obscure Origin—Fred Kern, Jr., M.D., Denver, Col. (Sponsored by Missouri Society of Internal Medicine.)
Vascular Studies of the Large and Small Bowel—Alexander R. Margulis, M.D., San Francisco, Calif. (Sponsored by Missouri Society of Radiology.)
Treatment of Abdominal Angina—E. S. Crawford, M.D., Houston, Texas.

2:00 p.m. Scientific session. (Surgical.), *Lido Room.*
(2:00) Limited Surgical Treatment of the Complications of Duodenal Ulcer Disease with Preservation of the Gastric Secretory Inhibitory Mechanisms—Edgar J. Poth, M.D., Galveston, Texas. (Sponsored by Missouri Surgical Society.)
(2:30) Office Gynecology—J. Russell Vaughan, M.D., St. Louis.
(3:00) The Dizzy Patient—G. O'Neil Proud, M.D., Kansas City, Kansas.

3:30 p.m. Intermission to view exhibits, *Exhibit Hall.*

4:00 p.m. House of Delegates meeting, second session, *Chase Club*
(Immediately following House adjournment.)

5:30 p.m. Reference Committee meetings.

6:30 p.m. Missouri Society of Radiology Dinner, *Tiara Room, Park Plaza.*

6:30 p.m. Missouri State Surgical Society Dinner, *University Club.*

Tuesday, April 6

8:00 a.m. Registration, *Exhibit Hall.*

9:00 a.m. Scientific session, *Khorassan Room.*
The Bleeding Patient—C. Rollins Hanlon, M.D., St. Louis, moderator.
X-Ray Negative Upper GI Bleeding—Irving B. Brick, M.D., Washington, D. C.
Technical Factors in Control of Bleeding at Operation—Vallee Willman, M.D., St. Louis.
Operative Procedures in Gastrointestinal Bleeding—John H. Lander, M.D., Columbia.

10:30 a.m. Intermission to view exhibits, *Exhibit Hall.*

11:00 a.m. Scientific session, *Khorassan Room.*
Hemophilus Influenzae Infections in Early Life—William L. Bradford, M.D., Rochester, N. Y., winner of the Missouri University Medical Alumni Award for 1965.

11:30 a.m. Scientific session, *Khorassan Room.*
Sex and the Role of the Practicing Physician—William H. Masters, M.D., St. Louis.

12:00 noon University of Missouri Alumni Luncheon, *Gourmet Room, Park Plaza.*

1:45 p.m. Scientific session, *Lido Room.*
Resuscitation—Donald V. Benson, M.D., Baltimore. (Sponsored by MSMA Committee on Anesthesiology.) Presentation followed by panel discussion and question-and-answer period.

1:45 p.m. Economics session, *Khorassan Room.*
The Business Side of Medicine. (Sponsored by the MSMA Committee on Medical Economics.)
Moderator: Glenn O. Turner, M.D., Springfield.
Panelists: Floyd F. Wehrenberg, Kansas City, Southern Division Manager and Partner, *Professional Management Midwest;* Lee M. Wagy, St. Louis Manager, *Professional Management Midwest;* William H. Kidd, Kansas City Manager, *Professional Management Midwest.*

3:00 p.m. Intermission to view exhibits, *Exhibit Hall.*

3:30 p.m. Scientific session, *Khorassan Room.* (Sponsored by Missouri Heart Association.)
Current Concepts in Heart Disease—Albert M. Estes, M.D., Cape Girardeau, moderator.
Surgical Management of Acquired Valvular Heart Diseases—Arthur C. Beall, Jr., M.D., Houston, Texas.
Diagnosis and Medical Management of Heart Block—Noble O. Fowler, M.D., Cincinnati, Ohio.
Cardiac Pacemaker Implantation for Stokes-Adams Disease—Howard A. Frank, M.D., Boston, Mass.

3:30 p.m. Scientific session, *Lido Room.*
Acute Cervical Spine Trauma—Richard E. Lord, M.D., St. Louis, moderator.
The Cervical Disk—Earl P. Holt, M.D., St. Louis.
Psychiatric Mechanisms in Post-Traumatic Neck Pain—Jackson Smith, M.D., Chicago, Ill.
Fractures and Dislocations of the Cervical Spine—J. William Fielding, M.D., New York, N. Y.

5:00 p.m. Intermission to view exhibits, *Exhibit Hall.*

6:00 p.m. Washington University Alumni Reception, *Tiara Lounge, Park Plaza*

6:00 p.m. St. Louis University Alumni Reception, *Stockholm Room.*

7:30 p.m. Banquet honoring Past Presidents of MSMA, *Khorassan Room.*
Practice, Learning and Progress—Vernon E. Wilson, M.D., Dean and Director of the University of Missouri School of Medicine.

Wednesday, April 7

7:30 a.m. House of Delegates meeting, breakfast and final session, *Khorassan Room.*

New broad-spectrum penicillin but without broad-spectrum toxicity[1-10]

no blood dyscrasias
no photosensitivity
no severe gastric disturbances
no pigmentation of teeth
no kidney damage
no accumulation in long bones

PENBRITIN (ampicillin) brings the traditional penicillin advantages to areas of treatment formerly dominated by the tetracyclines and chloramphenicol – urinary and gastrointestinal infections, as well as respiratory infections. But PENBRITIN (ampicillin) *does not cause the toxic disorders* associated with other broad-spectrum antibiotics.[1-10] And highly important: PENBRITIN (ampicillin) *kills* bacteria instead of merely suppressing them.

Usual dosage: Adults – 250 mg. every six hours in respiratory infections; 500 mg. every six hours in urinary and gastrointestinal infections (higher doses may be needed in severe infections). Children – (under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms.

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606 – Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Editorial. Brit. M. J. *ii*:223 (July 22) 1961. 2. Rolinson, G. N., and Stevens, S.: Brit. M. J. *ii*:191 (July 22) 1961. 3. Stewart, G. T., *et al.:* Brit. M. J. *ii*:200 (July 22) 1961. 4. Brown, D. M., and Acred, P.: Brit. M. J. *ii*:197 (July 22) 1961. 5. Batchelor, F. R., *et al.:* Nature *183*:257, 1959. 6. Knudsen, E. T., *et al.:* Brit. M. J. *ii*:198 (July 22) 1961. 7. Doyle, F. P., *et al.:* Nature *191*:1091 (Sept. 9) 1961. 8. Acred, P., *et al.:* Brit. J. Pharmacol. *18*:356, 1962. 9. Harrison, P. M., and Stewart, G. T.: Brit. J. Pharmacol. *17*:420, 1961. 10. Editorial. Lancet *ii*:723 (Oct. 5) 1963.

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Ayerst Laboratories, Dallas, Texas, Booths 38 & 39.
Beltone Hearing Service, St. Louis, Mo. Booth 48.
Ciba Pharmaceutical Company, Summit, N. J. Booth 19.
Coca-Cola Company, Atlanta, Ga. Booth 20.
Contour Chair Shop, St. Louis, Mo. Booth 34.
Dome Chemicals, Inc., New York, N. Y. Booth 4.
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Dumas-Wilson & Co., St. Louis, Mo. Booth 8.
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Missouri Medical Service (Blue Shield), St. Louis, Mo. Booth 33.
Ortho Pharmaceutical Corp., Raritan, N. J. Booth 23.
Parke, Davis & Company, Detroit, Mich. Booth 17.
Professional Management Midwest, Kansas City, Mo. Booth 27.
Roche Laboratories, Nutley, N. J. Booth 32.
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W. B. Saunders Company, Philadelphia, Pa., Booth 1.
Schering Corporation, Union, N. J. Booth 42.
G. D. Searle & Co., Chicago, Ill. Booth 15.
Shampaine Industries, Inc., St. Louis, Mo. Booths 10 & 11.
Smith Kline & French, Philadelphia, Pa. Booth 9.
E. R. Squibb & Sons, New York, N. Y. Booth 52.
The Stuart Company, Pasadena, Calif. Booth 24.
Thermo-Fax Sales, Inc., St. Louis, Mo. Booths 13 & 14.
S. J. Tutag & Co., Detroit, Mich. Booth 37.
The Upjohn Company, Kansas City, Mo. Booth 2.
United Medical Equipment Co., Kansas City, Mo. Booth 46.
U. S. Vitamin & Pharmaceutical Corp., New York, N. Y. Booth 5.
Vance-Whitworth, Inc., St. Louis, Mo. Booth 18.
Wallace Laboratories, Cranbury, N. J. Booth 43.
Westwood Pharmaceuticals, Buffalo, N. Y. Booth 51.

Volume 62, Number 4—April, 1965

Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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NORMAN D. ASEL, M.D.
Columbia

Acne: A Review

An extensive review of the literature, apparent causes and most successful methods of treatment for this most widespread cutaneous disorder of adolescence. The author concludes that despite the high incidence of the disease, the therapy of acne remains largely empirical. Dr. Asel is Associate Professor of Medicine (Dermatology) at the University School of Medicine.

Through the years much has been written on the complex subject of acne, some of which is undoubtedly true and some of which draws more upon folklore than on scientific fact. Most publications and textbooks base their conclusions about acne only on clinical observation and brief clinical trials. Still today, the therapy of acne is empirical. To question the integrity or honesty of the authors with years of experience or to deny that their thoughts and observations are clinically useful is not my intention. Their efforts have resulted in an accumulation of valuable clinical evidence and have stimulated others to study more carefully the mystery of acne.

Acne is a common disorder. Andrews and Domonokos state that 90% of all adolescents have this problem.[1] The disorder appears at puberty and may continue during young adult life. An equal number of males and females are affected, but it is thought that in females acne has an earlier onset, perhaps due to earlier sexual maturation. Males, however, appear to have a more severe disease once the acne process has begun.

In a survey at the San Antonio Induction Center of the U.S. Army, 26,655 males ranging in age from 18-25 years were examined for all known skin problems during one year.[2] It was found that 9,400, or about 35%, of these inductees had acne in various degrees of severity. In a national survey by Welton, 50 dermatologists in private practice in five geographic areas tabulated 27,000 office visits for all types of patients.[3] Eighteen per cent of the patients, or approximately one in five, visited the dermatologist for treatment of acne. This survey included about twice as many females as males and 60% of all visits to these dermatologists by females in the age group of 10-19 years were for treatment of acne. Because approximately the same number of males as females have acne problems, it would appear that the adolescent girl is more conscious of her complexion and is more interested in expert advice than is the male. My own experience supports this speculation. It is estimated that there are 7,500,000 visits to physicians each year for the treatment of acne and that less than one half of these visits are to the dermatologist. Acne is probably the most common cutaneous disorder of medical significance.

Formation of the Acne Lesion: Acne is a chronic disease of the pilosebaceous follicles which contain hair, sebum, bacteria and keratin.[4] The disease primarily affects the face, however, in many instances, the back, chest and upper arms may be involved, and even most of the skin may be sparsely involved in severe cases. In the early development of the disease, two clinical and histopathological pictures may appear. The development of the typical "blackhead," or open faced comedo, and "white-head," or closed comedo, is well known. The "blackhead" is an open epithelium lined sac filled with keratin, lipids and bacteria. The black discoloration is the result of oxidation of lipids. The "whitehead" is an epithelium lined sac lying beneath an intact epidermis, though occasionally the sac may have a microscopic opening to the surface, small enough to keep the contents of keratin, bacteria and lipids from escaping or oxidizing. From continuing engorgement, the sac eventually ruptures, dumping into the subcutaneous tissue, keratin and lipids. These substances promote a foreign body type of granulomatous cellular reaction in the dermis around the sac. The fatty acids and bacteria provoke an intense inflammatory reaction with polymorphonuclear and lymphocytic cellular infiltrates. A deep cystic type of acne may result.

When acne is present, more superficial pustules are often found which are probably due to early rupture of the duct of the pilosebaceous follicle and infection of the upper portion of the pilosebaceous duct. This process probably is occurring all the time and is a part of the continuing acne process. Healing occurs by fibrosis with resultant pits and scars. The severity of the acne depends upon the depth of injury in the dermis. Frequently during healing, epithelium from the follicles may re-encapsulate the entire inflammatory process and recreate the acne inflammation.

Bacteriology: Most investigators agree that bacteria found in acne lesions are usually secondary invaders. Corynebacterium acnei, some diphtheroids, streptococci and staphylococci have been incriminated in infected acne. Recently, Kligman studied the bacteriology of acne in 175 cases.[5] He found a constant association of staphylococcus albus and corynebacterium acnei in all of these cases. These two organisms were also found singularly. The more inflammatory lesions tend to have the fewest organisms. He assumed the natural defenses of the host were able to destroy the organisms. In less than 3% of his cases were other diphtheroids persent and from only one patient was he able to culture a pathogenic staphylococcus aureus.

To further study the role of corynebacterium acnei in the pathogenesis of acne, Kligman injected live corynebacterium acnei into sterile steatomas in three subjects.[6] In each instance, after seven days from the time of the injection, a violent inflammatory reaction occurred in the cyst and surrounding area. Injections of sterile saline, killed corynebacterium acnei or staphylococcus albus, produced no visible reaction. He postulated that corynebacterium acnei in a suitable anaerobic environment such as a keratin and lipid laden cyst, may play an important role in the pathogenesis of acne.

Androgenic Influence on Sebaceous Gland: For many years it has been known that androgens increase the size and the secretion of the sebaceous gland.[7] The sebaceous gland is a holocrine gland and delivers sebum to the follicular orifice. In recent years, Strauss has devised a method of measuring sebaceous activity by means of gravimetric determination of sebum secreted.[8] One may also directly measure gland size by histopathologic methods but this is an extremely difficult procedure and according to Strauss is not as reliable as gravimetric studies. Strauss has established that the output of sebum is directly proportional to the size of the sebaceous gland.

In Strauss' studies, eight prepuberal boys and six prepuberal girls, were given 50-100 mg. of testosterone daily for 7-12 weeks. All children developed marked hypertrophy of sebaceous glands, increased sebum production and acne. He also gave 5 mg. of testosterone daily to prepuberal children and they too developed sebaceous gland hypertrophy and increased sebum production. It must be remembered that the normal adult male normally secretes from 17-35 mg. of testosterone daily. The 5 mg. dose shows the responsiveness of the sebaceous gland to even minute quantities of the male hormone. Strauss did not quantitate the dose response relationship but it appeared that the larger the dose of testosterone, the larger the total sebum output.

To postpuberal males, Strauss gave 100-300 mg. of testosterone daily for six weeks. Clinically, he was unable to demonstrate increased sebum production nor was this demonstrated by gravimetric studies. Biopsy did not reveal sebaceous gland hyperactivity or enlargement. Eight postpuberal females were given 100 mg. of testosterone daily for six weeks, and clinical evidence of increased sebum production was seen. Biopsy studies showed sebaceous gland hyperplasia and four of these individuals developed acne. Three females, 60-65 years of age were given 100 mg. of testosterone daily for six weeks and all showed increased sebum production but evidence of increased sebaceous gland hypertrophy was not found. Further evidence of the effect of testosterone on sebaceous activity is shown by the measurement of sebum production before and after orchiectomy in mature males operated for prostatic carcinoma.[9] Gravimetric assays on eight subjects showed a marked reduction in sebum production one month following surgery.

To further demonstrate the effect of androgen on the sebaceous gland, Hamilton studied 91 castrated males before puberty and during the usual adolescent period.[11] None of these castrated males developed acne. He also followed 11 female castrates who were operated before puberty and none of the females developed acne. He also observed six adolescent males who had severe acne before castration and within three months' time, the acne process completely disappeared. These studies demonstrate that the sebaceous gland, particularly as acne develops, is dependent upon androgenic activity.

The Effect of Estrogens: It has been known for many years that estrogen will decrease the size of sebaceous glands in many experimental animals. Strauss and Kligman studied the effect of 50-100 times the physiologic dose of estrogen on postpuberal human males and females and were able to produce sebaceous atrophy and decreased sebum production in every instance. They also studied the effect of topical estrogen of high concentration on adult males and females. Topical estrogen decreased sebaceous activity and the size of the sebaceous gland, whereas topical androgen increased sebum output and increased the size of the sebaceous glands. They noted that these experiments were of short duration, and did not describe the effect of smaller more physiologic doses of estrogenic and androgenic substances on the pilosebaceous system.

The Effect of the Adrenal Glands: The androgen produced by the adrenal glands also influences the sebaceous system. Strauss studied three female patients with adrenal hyperplasia resulting in Cushing's syndrome and found they had increased sebum production prior to adrenalectomy and following adrenalectomy, found a large reduction in sebum production as measured by the gravimetric method.[12] A young 25-year-old adult male with untreated Addison's disease had a marked reduction in sebum production. As a teenager he had acne and again developed severe acne three months after replacement therapy with the corticosteroids. Numerous androgens have been isolated from the adrenal gland. The physiologic activity of many of these hormones has not been ascertained. Dehydroepiandrosterone is secreted at the rate of 30 mg. daily for the normal adrenal and may be the most important androgen secreted by the adrenal gland. Dehydroepiandrosterone stimulated sebaceous activity when administered in doses of 100 mg. three times weekly to the adult male subject whose sebum had been previously suppressed by estrogen. Androsterone, an intermediary metabolite of androgen, has no significant effect on the sebaceous gland. Sebum production was not increased as much by adrenal androgen as with testosterone nor was there as great a glandular hyperplasia.

Progesterone: The effect of progesterone on the sebaceous gland in animal experimentation and in human studies is still controversial.[10] The more recent evidence seems to point out that probably progesterone has no effect on sebaceous activity. It is speculated, however, that extreme large doses of this hormone may convert to active androgen which will incite the acne process.

Psychic Influences: Acne in many instances becomes a tragedy. An adolescent with only minor complexion problems may become so emotionally disturbed and distressed that he or she becomes asocial. The usual everyday social relationships are rejected. Adolescence is a difficult period, and to have a "pimply" face is sometimes the last straw. The withdrawn child may become aggressive, angry and rebellious. This child then becomes a problem to society as well as to himself. His parents, interested in his growth and development, and trying to guide him to become a useful citizen, may become perplexed and not realize that the child's complexion problem is one important cause of the emotional disturbance. Furthermore, it is probable that emotional disturbances actually worsen the acne process in some cases.

THERAPY OF ACNE

The therapy of acne may be divided into three parts; local medication, systemic treatment and psychiatric support. The subject of local therapy may be subdivided into that which the patient may do for himself and that which the physician may do during visits by the patient to the office. Local treatment the patient does for himself may have little value but definitely gives the psychological impression that he is helping himself. With proper instructions they usually do no harm. Most local preparations contains agents which peel the skin, namely sulfur, resorcin and salicylic acid. These materials may be incorporated into soaps, lotions or creams of which there are many available commercially. Some topical preparations contain hexachlorophene for a bactericidal effect. Occasionally, the doctor may encounter an individual who is intolerant of these topical medications because of the primary irritation, or even allergic sensitivity, in which case the patient soon learns to avoid them. Topical treatment is designed to reduce oiliness of the skin and to exfoliate the skin, unplugging the sebaceous orifice, thus allowing the oil of the sebaceous gland to flow freely out. These medications may have value in the papular comedo acne, but are relatively worthless in cases of deep cystic acne.

The most useful local therapy of acne is routine incision and drainage of comedo pustules and cysts. Admittedly, it is time consuming, tedious and strains the eyes, but it is most beneficial to patients with acne. The technique is simple, but to master the procedure requires some practice. Incision is relatively painless, does not result in increased scarring and so the patients seldom object. The tools consist of a Bard-Parker No. 11 blade, a comedo extractor, alcohol sponges and a pair of magnifying glasses if the physician requires them. The surgical principle of gentleness in handling tissue is strictly observed, a tiny episiotomy is performed at the follicular orifice following Langer's lines and the comedo extractor is applied over the episiotomy with gentle pressure. Usually the entire contents of the gland is gently lifted out and the plug of sebum is removed without pressure from the comedo extractor. Bleeding is minimal, ceases entirely with washing of clear cold water, and no evidence of the surgical procedure is evident in 24-48 hours. Large cysts and pustules heal faster, and usually patients notice improvement in their complexion in three to four weeks of weekly visits to the physician.

Ultraviolet light is sometimes helpful in the therapy of acne. It has been a clinical observation for many years that acne has a tendency to improve during the summer months and many patients volunteer this information. It is probably helpful because sunshine aids in exfoliation and also because the busy teenager of our present day is more relaxed during the summer vacation, and removed from tensions of a "heavy" work load in winter. Ultraviolet light is particularly useful in the papular comedo type of acne.

Carbon dioxide slush, a mixture of CO_2 crystals, sulfur and acetone ground with a mortar and pestle, is an old remedy used by many dermatologists. The mixture is applied to the affected area by a wad of gauze wrapped around a tongue blade, dipped into the slush and then gently wiped across the affected areas of the face. It is helpful, and most patients accept it, but is is a messy procedure. I have not been impressed with its routine use, and in some areas carbon dioxide may not be readily available.

Within recent years one of the most valuable therapeutic agents for the local therapy of deep-seated cystic acne has been the local injection of triamcinolone suspension. It is supplied in 10 cc. vials in a concentration of 10 mg. per cc. The mixture is diluted with sterile water to 5 mg. per cc. and ½ to 1 cc. is injected directly into the cystic cavity and around the cyst once every one to three weeks, depending upon the clinical response. Often such therapy is dramatic with reduction of edema, swelling and loss of redness. With the above concentration I have not experienced atrophy at the injected site. I have never witnessed spreading of infection and it may prevent excessive scarring.

There is no doubt in my mind that X-ray therapy is beneficial in the treatment of acne and this modality is still widely used. However, it should never be used by the physician not thoroughly trained in its application. Because of the recent apprehension of the lay public and certain portions of the medical profession regarding ionizing radiation for a benign disease process, I find myself using X-ray therapy less frequently and only in carefully selected cases. During the year of 1963, I treated several hundred cases of acne and did not use X-ray in any case. Acne is a benign, not a malignant disease, and proper medical management usually suffices to control the disease process.

Systemic Therapy: Inasmuch as the acne process is in most instances a chronic disease, the physician in control must rely more upon systemic therapy than any other modality of treatment. As one develops experience with the disease, the physician soon develops certain intuitiveness in his method of approach to the particular case confronting him. It is a mistake to establish a strict routine in the care of acne patients. The etiology of acne is still not fully understood and therapy is empirical. It is discouraging for the patient and frustrating for the physician to care for a patient who is unresponsive to conventional acne treatment.

Aqueous vitamin A in large doses of 100,000-200,000 units per day is of some benefit in a few cases of acne. I limit the use of vitamin A to the mild papular and comedo types of acne. If the speculation that some acne processes are due to imperfect keratinization at the sebaceous duct or the follicular orifice of the pilosebaceous system, then vitamin A might be useful. A trial of vitamin A therapy for one to three months may be undertaken along with appropriate local therapy as a fair clinical trial. Vitamin A may be given safely for months and the dose may be reduced to 100,000 units a day for sustained control.

Antibiotics in full dosage may be used efficaciously and often the results are dramatic in the severe cystic and pustular forms of acne. Tetracycline and erythromycin may be given for months or years without harm unless an allergic sensitivity develops or unless renal insufficiency is present. Chloramphenicol should not be used because of the danger of eventual blood dyscrasias, and TAO or cyclamycin should be avoided because of alleged hepatitis. The unfortunate aspect of prolonged antibiotic therapy is the continuing expense. However, once clinical response has been attained, the dosage may be reduced to small maintenance dose of 250 mg. daily.

It is reported that sulfonamides such as Gantrisin (sulfisoxazole) or Madribon (sulfadimethoxine) or Kynex (sulfamethoxypyridine) are helpful in control of the acne process. Initial dose of 1.0 gram daily of Madribon for one week and a maintenance dose of .5 gram daily for three weeks should be instituted and clinical response should be noted in one month. Unfortunately, my experience with sulfa drugs has been disappointing in the control of this troublesome disease.

Long term estrogen therapy has a place in the control of acne. Premarin (Ayerst) may be used either in the 0.3 mg. or 0.625 mg. dosage in both sexes. For the male, I usually use 0.3 mg. Premarin daily for 4-6 months. Occasionally the patient may develop breast enlargement and tenderness which usually subsides in two to three weeks when the medication is withdrawn. I have never witnessed loss of libido or testicular atrophy and some of my male patients have conceived healthy children when maintained on this medication.

Estrogen is of value in the long term therapy of acne in the female who also complains of menstrual exacerbations of her disease. One usually may administer Premarin 0.3 mg. daily with no interference in the menstrual cycle of the young female. If one encounters the difficulties of missed periods or spotting by this method, he may go to the conventional cyclic method of administration of the hormone. I then use Premarin 0.625 mg. daily starting on the fifth day of the cycle and continue for 20 days. I have never encountered serious difficulties and I find it extremely helpful in the long term therapy of this troublesome disorder. Recently, Strauss reported upon the effect of Enovid (nor-ethynodrel mestranol .075 mg.) in the therapy of acne.[13] He reported the results of 19 female subjects. He found a reduced sebum production by his gravimetric assay studies and improvement in the patient's acne. Improvement in the acne usually did not occur until after the fifth menstrual cycle after initiating therapy with Enovid. He used both 5 and 10 mg. dosage schedules given with tablets for 20 days and starting therapy on the fifth day of the cycle and continued daily for 20 days and repeating the dosage schedule each month. With some patients he noted a relapse of the acne process upon cessation of therapy and improvement when treatment was resumed. I believe the improvement Strauss observed in these patients is due to the long term estrogen effect with resultant decrease in sebaceous gland size and reduction of sebum output.

The occasional patient with acne who is tired, sluggish, overweight, lacking in breakfast appetite and maybe anemic, will respond to modest doses of thyroid extract (in spite of the fact the PBI and BMR are within normal limits). Thyroid extract in the control of acne is a debatable subject. It is strongly advocated by some and rejected by others but on many occasions I have found it useful.

Systemic corticosteroids are advocated by some therapists in the management of severe inflammatory cystic disease. However, **the prolonged use of steroids in acne, even in modest doses, is to be condemned. The complications of such therapy may be more severe to the individual than the acne.** The physician who undertakes steroid therapy for acne may justify short bursts of the steroids to encourage the patient to continue with more conventional therapy at a later date. It should be understood by the patient at the onset of such treatment that benefit may only be temporary and is for the most part to relieve him of the severe exacerbation of his disease.

In the severe inflammatory cystic and repulsive acne not responsive to the more simple treatment regimens with antibiotics, the occasional patient may receive clinical improvement if in conjunction with the antibiotic therapy, 2-4 cc. of gamma globulin are given once a week. This treatment has no complications, but the physician often debates with himself whether or not to spend his patient's money for therapy which may be of dubious value.

The question of diet in the control of acne is a debatable subject. I do not starve a patient, but restrict only modestly the intake of milk and dairy products, chocolate, nuts and too many foods fried in deep fat. I have seen entirely too many patients who have been on moderately restrictive diets who have informed me that a piece of chocolate pie, a bowl of French fried potatoes or a bag of peanuts encouraged the development of acne. Why shouldn't I believe them? However, once the problem is controlled, I encourage the patient to slowly break his diet to see if any of the restricted foods will cause an exacerbation.

Many individuals afflicted with severe acne are in the depths of despair. These people need assurance, sympathetic understanding and all possible psychological assistance from their physician. The physician must continually encourage, instill confidence, and attempt to elevate the patient's morale. While it is quite true that many acne patients will improve with age and "outgrow" their problem, these young people seek the physician's advice and help. They should never be dismissed with the comment "you will outgrow your disease, so forget about it." The patient desires and deserves more than this.

It is fortunate that most acne problems eventually will subside. I wonder at times to what extent the therapy contributed to the remission in mild acne. However, it is most gratifying to witness clinical improvement of a severe cystic and inflammatory acne and know that you have prevented disfigurement. I know of no other chronic disease process that is capable of humbling the learned physician more than a stubborn, disfiguring acne problem in a young teenager or adult.

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Scientific Program

MISSOURI CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS

Chase-Park Plaza Hotel, St. Louis, Mo.

April 4, 1965

10:00 a.m. Panel Discussion: "Management of Cardiac Arythmias"
Moderator: Herbert B. Zimmerman, M.D., St. Louis.

11:00 a.m. Panel Discussion: "The Present Status of the Management of Acquired and Congenital Heart Lesions"
Moderator: Hugh E. Stephenson, Jr., M.D., Columbia.

12:00 noon Luncheon—Speaker, Alfred Goldman, M.D., St. Louis, President, American College of Chest Physicians.

8:00 p.m. Fireside Conferences

(1) "Surgery for Metastatic Malignant Disease to the Lungs"
Moderator: John Polk, M.D., Springfield.

(2) "Thoracotomy—Then What?"
Moderator: Richard Yore, M.D., St. Louis.

(3) "Office Cardiology, Do's and Don'ts"
Moderator: Glenn O. Turner, M.D., Springfield.

(4) "Pulmonary Infections"
Moderator: William A. Werner, M.D., St. Louis.

(This program is acceptable for continuation study credit by the American Academy of General Practice.)

MAURICE SOLOMON, B.S., NATHAN C. GALLOWAY, M.D.
and **RODNEY PATTERSON, M.D.,** ***Columbia***

The Kidney and Tetracycline Toxicity

An analysis of hospital records of 22 patients, indicating a high degree of correlation between administration of tetracycline and increased incidence of azotemia. The authors recommend that antibacterial drugs other than tetracycline be used for patients with renal insufficiency. Maurice Solomon is a senior medical student at the University Medical Center; Dr. Galloway is Assistant Professor of Medicine; and Dr. Patterson is an Instructor in Medicine and Research Fellow.

Recent reports indicate that tetracycline administration to persons with renal insufficiency may increase the degree of azotemia.[1, 2] Additionally, asymptomatic azotemia may progress to the clinical syndrome of uremia. It has been our general impression that unexplained increases in blood urea nitrogen (BUN), occurring in patients prior to the description of this cause and effect relationship, might retrospectively be attributable to tetracycline. For these reasons, the hospital records of 100 patients with azotemia were reviewed with particular reference to tetracycline therapy. These patients were admitted to the University of Missouri Medical Center Hospital during the years 1957-1959.

Patients were included in this study if the following criteria were fulfilled: (1) The patient received tetracycline for three or more days. (2) The patient was not anuric or oliguric. (3) Sufficient laboratory data were available for evaluation. These criteria were fulfilled in 22 instances. In 20 patients BUN levels increased significantly during the administration of tetracycline. In the remaining cases, changes in urea concentration were minimal or absent. The latter group consisted of two patients with lower pre-treatment BUN values, and therefore, presumably less severe renal impairment than the other 20 patients receiving tetracycline. Detectable increases in BUN levels were present two to nine days (mean five days) after the onset of tetracycline therapy and continued to rise throughout the period of drug administration. After the drug was discontinued, BUN remained near peak levels for approximately five days (two to nine days) but subsequently declined toward pre-treatment levels in all cases in which complete data are available.

The maximum increases in BUN values during tetracycline therapy ranged from 14 mgm% to 137 mgm%. The marked variation is due to several factors including (1) degree of renal insufficiency (i.e., reduction in glomerular filtration rate); (2) duration of tetracycline administration (4-12 days); (3) the presence of associated disorders (GI bleeding, sodium depletion, operative procedures) which might, themselves, cause an increase in BUN; (4) variations in therapy of the underlying renal disorder.

Typical changes in the BUN are depicted in Figs. 1, 2, and 3. The data shown in Fig. 1 are from a patient with chronic pyelonephritis who received tetracycline on the basis of urine culture and bacterial sensitivity studies. The rising BUN and inorganic phosphate were associated with symptoms of the uremic syndrome (vomiting, twitching, and lethargy), which at the time were not readily explainable, since the urine culture

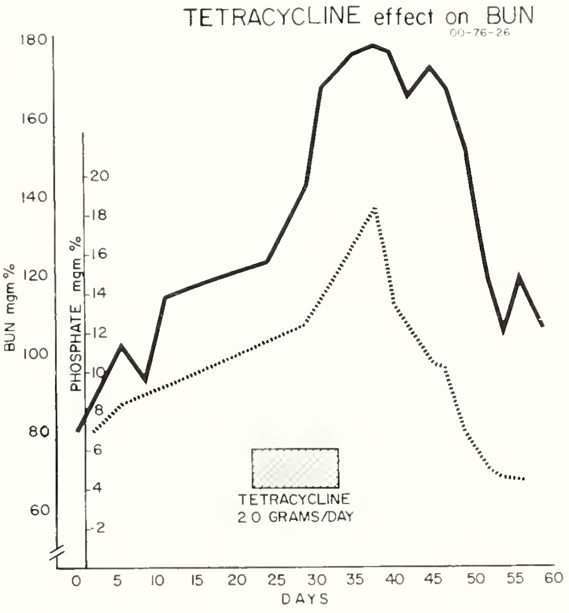

Fig. 1 A typical time-sequence-relationship between tetracycline administration and increasing BUN with concomitant rise in serum phosphate concentration. Dotted line indicates phosphate level.

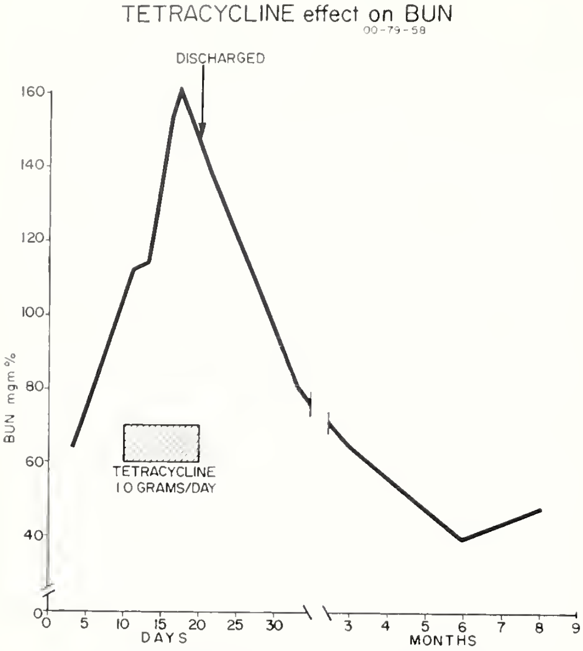

Fig. 2 Graph showing typical increase in BUN concentration associated with tetracycline therapy. Note that BUN decreases to pre-treatment levels during home therapy which did not include tetracycline.

had become sterile and the urinary volume was adequate. These symptoms and laboratory findings reverted to pre-treatment levels after discontinuing tetracycline.

Fig. 2 demonstrates the effect of tetracycline on a patient with chronic renal insufficiency. This patient was first seen in November, 1957 when tetracycline administration was associated with a rise in BUN from 63 to 161 mgm%. At that time she was discharged from the hospital and followed in the Out-Patient Department. Seven months after admission the BUN was 65 mgm% and six years later, 44 mgm%. This sequence of events represents the harmful effects which may result when tetracycline is given in the presence of impaired glomerular filtration rate.

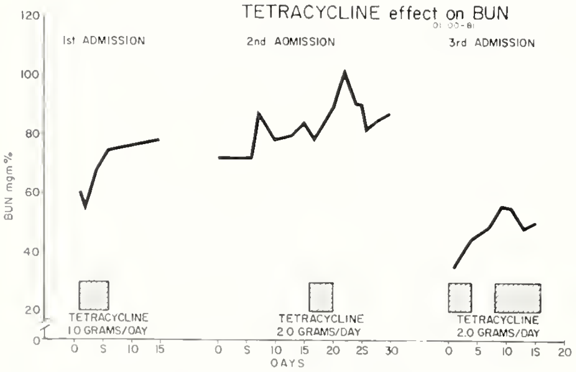

Fig. 3 Serial BUN concentrations during three separate hospital admissions of one patient. On each occasion, tetracycline therapy was associated with increasing concentrations.

The data illustrated in Fig. 3 depict the clinical course of an elderly diabetic with a large cystocele and chronic pyelonephritis. During each of three hospital admissions urine cultures contained numerous bacteria but symptoms of acute pyelonephritis were absent. On each occasion tetracycline administration was accompanied by changes in BUN levels as indicated in the figure. It was interesting to note that the BUN was lower during out-patient follow-up, when she was not receiving tetracycline, than after two weeks of hospital care.

DISCUSSION

Tetracycline has been widely used as a broad spectrum antibiotic for slightly longer than a decade. During this time, its value in the treatment of infectious diseases has been repeatedly demonstrated. Indeed, tetracycline is particularly useful in the therapy of gram-negative bacillary infections which cause the majority of urinary tract infections. However, as with most therapeutic agents, untoward reactions are occasionally encountered. Perusal of the literature indicates that toxic responses to tetracycline have been reported with increasing frequency, and in greater variety, as the duration of its availability has extended. While this antibiotic is apparently well tolerated by a large majority of patients, there are several clinical situations in which tetracycline is sufficiently hazardous to warrant restriction of its usage. This limitation is not imposed because of the mild side effects of the drug (e.g. gastrointestinal) but to prevent its unfavorable influence on cellular metabolism. Tetracycline crosses the placental barrier during the last trimester of pregnancy, and may cause depression of fetal bone growth,[3] as well as discoloration and hypoplasia of developing teeth.[4] A serious, but uncommon, complication of tetracycline therapy during pregnancy has been fatal fatty metamorphosis of the liver.[5] In such circumstances, it has been recommended that tetracycline be given cautiously in reduced dosages.[6] However, one must question the justification for even limited usage of tetracycline in any circumstance, which renders it a potential toxin; particularly since other antibacterials of equal effectiveness are available, which do not represent a threat to the well-being of the patient.

The kidney is involved, directly or indirectly, in most forms of serious tetracycline toxicity.

Outdated tetracycline becomes a potential nephrotoxin, capable of causing a renal tubular disorder resembling the adult variety of Fanconi syndrome.[7, 8] These rare examples of nephrotoxicity only occur with aged tetracycline and are apparently reversible. This sequence of events is most likely to occur when patients ingest unused portions of earlier prescriptions which have been retained in their medicine cabinets for prolonged periods. Of considerably greater importance, regarding the kidney, is its role in the genesis of adverse systemic effects of tetracycline. Because this antibiotic is excreted predominantly by the kidney, abnormally high blood levels frequently occur in persons with renal insufficiency, even when the recommended dosages are administered.[9] It follows that the undesirable effects of tetracycline occur more frequently and with greater severity in persons with kidney disease. For example, the hepatic reactions which occurred in pregnant women followed tetracycline therapy of acute pyelonephritis.[5]

An additional complication in persons with renal insufficiency results from their inability to excrete nitrogenous substances adequately, particularly when excretory demands are increased. Metabolic balance studies demonstrate that tetracycline, in recommended therapeutic doses, causes an appreciable increase in amount of urinary urea nitrogen.[10] While the precise mechanism responsible for this phenomenon remains to be defined, it is more likely anti-anabolic than catabolic in nature.[1] It appears to be a systemic response and probably results from inhibition of amino-acid entry into protein synthesis.[1] In persons with normal kidneys, the augmented nitrogenous load is readily excreted and no appreciable elevation in the BUN occurs. However, in the presence of inadequate renal function, not only does the BUN concentration increase, but also other biochemical abnormalities may develop (Fig. 1). An increase of serum phosphate and decrease of bicarbonate are the most commonly observed changes. However, minimal increases in serum uric acid and creatinine may occur.[2] These chemical abnormalities may result in anorexia, nausea, vomiting, and other features of the uremic syndrome. Thus, while tetracycline may reduce the bacterial colony count in the urine of patients with pyelonephritis and renal insufficiency, it may at the same time cause progressive clinical deterioration of the patient.

Animal studies and limited clinical studies in man suggest that the degree of anti-anabolic effect of tetracycline is proportional to amount administered and serum levels of the drug.[1, 2, 10] The patient with renal insufficiency is therefore in double jeopardy when exposed to tetracycline, first, because the increased nitrogenous load cannot be excreted and, second, because decreased excretion of tetracycline results in higher serum levels and further anti-anabolic effect.

The patients described in this report manifested increasing BUN concentrations during tetracycline therapy. In a retrospective study, it is impossible to be certain that the changes described were caused only by tetracycline. Indeed, in several instances other factors were probably involved in the progression of azotemia; however, in those patients who did not die, there was the expected time relationship between tetracycline therapy and changes in BUN.

Oxytetracycline and chlortetracycline also manifest the same anti-anabolic effect as tetracycline.[1] Because chlortetracycline excretion is primarily via the liver, high serum levels are uncommon, even in the presence of renal insufficiency.[9] Thus, toxicity due to drug retention is less likely with chlortetracycline than the other two drugs. However, the adverse effects resulting from metabolic derangement may be expected to occur with a high order of frequency when any of the various tetracyclines are administered to persons with renal insufficiency.

SUMMARY

Certain important aspects of tetracycline toxicity have been reviewed with particular regard to the kidney. Renal mechanisms may participate in the pathogenesis of tetracycline toxicity in the following ways: (1) Aged tetracycline is a potential nephrotoxin capable of causing renal dysfunction. (2) Systemic toxicity may result from excessive blood levels of tetracycline due to inadequate excretion of the drug by diseased kidneys. (3) Metabolic alterations by tetracycline impose excessive excretory demands, in renal insufficiency, which result in uremia.

A retrospective analysis of the hospital records of 22 patients demonstrated a marked increase of azotemia associated with tetracycline administration in 20 instances. Since many drugs have equal antibacterial potential, but are less toxic than tetracycline, it is recommended that the latter not be administered to patients with renal insufficiency.

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COMMENT . . .

Our Readers Write

The appearance of a scientific article with the tragically ludicrous title of *Renal Transplant in a Community Hospital*, MISSOURI MEDICINE 62:25, January, 1965, initiates this comment.

In the present state of knowledge of transplantation biology, renal homotransplantation must be considered only slightly advanced from the purely experimental. Eugene Robin has eloquently stated the guide posts of moral and ethical conduct of transplantation.[1] The indiscriminate application of transplantation, as a therapeutic measure, in a community hospital, not only places the patient and a living donor in jeopardy, but has the potential effect of compromising genuine scientific progress.

Transplantation should be considered only when all other measures have failed, and must never be the product of hasty judgement, no matter how laudable the effort to prolong life. When chronic renal disease is the indication for transplantation, absolutely irreversible renal failure must be extant. In many instances, conservative management by experienced renologists may prolong useful life with only minimal renal function. With presently available techniques of chronic hemodialysis an individual may be maintained, for weeks if necessary, in anticipation of recovery of sufficient renal function to sustain life. Each and every transplantation must be conducted under a carefully controlled protocol to ensure that a maximum of useful information is recorded. There must be a reasonable possibility of success if a living patient and donor are subjected to the inordinate risk attending transplantation today. The use of a living donor requires not only careful medical study, but thorough consideration of the moral implications. The use of consanguineous donors over the age of 40 is contraindicated in most instances, because of the questionable suitability of the organ obtained and the risk to the donor because of the loss of renal function attendant upon aging.[2] Data recently accumulated show that long-term survival of individuals receiving a graft from an unrelated living donor, is no greater than individuals who receive a cadaver kidney. Improved methods of management of the donor kidney, obtained from a cadaver immediately upon death, make the use of living donors, except in the most favorable circumstances, improper.

The unfortunate opinion that, the technique of renal homotransplantation is not difficult, has appeared on several occasions in the current literature. This is in some measure true, however, it is paramount to success that such a high state of technical competence be achieved, that the operative procedure be as nearly perfect as mortal man may accomplish. This requires not only extensive clinical experience in vascular and urological surgery, but many hours in perfecting technique in experimental animals. To attempt renal transplantation without these skills, dooms the patient to certain death, since these gravely ill individuals do not tolerate complications resulting from technical error. After the actual transplantation, so dramatically appealing to the uninitiated, come the many weeks and months of often heart-breaking post-operative care. During this crucial period, consultation in renology, immunology, hematology and other special disciplines, must be available to the patient. Similarly, the laboratory facilities and financial resources must be at hand to allow the extensive laboratory examinations in frequency and kind necessary to manage the protracted course of the successful transplantation.

Only in major Medical Centers are the extensive facilities and skilled personnel available for this type of endeavor.

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The Physician and His Blind Patient

A thoughtful and sympathetic examination of a physician-patient relations problem which is frequent enough to merit consideration but probably rare enough to be overlooked by the average practitioner. Dr. Wheeler, who is Resident Physician in the Section of Physical Medicine and Rehabilitation at the University School of Medicine, sets forth some logical and simple guidelines which any physician might find helpful in establishing and maintaining good rapport with his blind patients. There are an estimated 10,000 blind persons in Missouri.

MOST PHYSICIANS, by virtue of their membership in the sighted community, are susceptible to common superstitions and feelings of uneasiness when dealing with the visually handicapped. If these attitudes are allowed to enter the relationship of the doctor and his blind patient, a small, but important part of medical care has been neglected. In matters of seating, examining and otherwise relating to the patient, intuition seldom suffices and the use of properly designed techniques is necessary. Instruction in these techniques has been directed toward the practitioners of ophthalmology, assuming, incorrectly, that this is the area of greatest physician/blind contact.[1] Actually, the vast majority of the blinded population's medical needs are supplied by other practitioners, the same physicians who have been consistently overlooked.

In developing a concise format for this presentation, it is apparent that such categorical relationships as "Sighted/Blind" and "Examiner/Blind" would be inadequate, as the nature of the problem prohibits such sharp distinction. As he is both the Sighted and the Examiner, the physician has to satisfy the special requirements of each. It is therefore thought that the intent of this paper will be better served by establishing a background of understanding before proceeding to more detailed items of importance. Regardless of format, the goal of increased rapport remains the same.

GENERAL CONSIDERATIONS

There are approximately 450,000 blind persons in the United States,[2] and about 10,000 of these reside in Missouri. Classification by age is unreliable, but it is estimated that more than half of these are 65 or over. The exact definition of blindness varies, but in this country we consider a person legally blind when central visual acuity is less than 20/200, or when peripheral fields do not exceed 20 degrees of arc. On the other hand, Finland accepts a state of blindness when "visual impairment prevents safe and independent navigation in unfamiliar surroundings." Whether the patient is totally blind or partially sighted (with some travel vision), problems arising during the physician-patient contact are essentially the same. By the nature of this unique relationship, the doctor must have a sensitive comprehension of the patient's particular needs. Whether we like it or not, a definite fact cannot be avoided, i.e., *our medical competence is usually judged by the non-medical acts that tend to instill confidence.* Destroy this confidence and the effectiveness of even the most superior medical training is lost on that patient forever. This can be quickly accomplished by dragging the blind patient around the office by a convenient coat sleeve.

Situations such as this are regretable, but they are neither unusual nor surprising. As in the suturing of wounds, improvization is acceptable only after mastery of the fundamental techniques. This is not to imply that the physician/blind patient relationship may be cemented merely by the use of techniques or methods or a series of rules. Before any learned system can be truly useful, there must be an awareness of the more subtle factors affecting the patient.

Such a process begins with conscious reaffirmation of the patient's identity as an individual. As a matter of convenience we occasionally speak of our "liver case" or "cardiac patient," but these characterizations are transient and limited in their usage. On the other hand, the "Blind Man" seldom enjoys such respite, as public opinion constantly, and perhaps with the best of intentions, affixes the seal of mystery and differentness. He should at least be free of this stereotyped image in his doctor's office.

Young or old, rich or poor, employed or unemployed, intelligent or stupid, sick or well, the visual handicap all-too-frequently eliminates consideration of other facets of personality and worth. Most people develop varying degrees of revulsion, pity or special prejudice concerning physical disability or disfigurement.[3] These feelings are constantly reinforced by our cultural emphasis on physical "beauty" and conformity. Of course, these same patterns of thought extend into other areas, but nowhere are they stronger, or more difficult to overcome, than when applied to the body image. The blinded person himself is pressured by whichever of these prejudices he has carried over from earlier sighted days, although these are usually at a subconscious level.[4]

Understanding this, it is easy to see how he might misinterpret and amplify the slightest hint of deference from a sighted person. Such an unconscious projection of his own repressed attitudes can create formidable obstacles. The physician should be aware of the potential effects of his own attitudes. Because of the patient's inability to perceive visual cues, interpretation of the doctor's voice and actions will be the major factor in obtaining reassurance.

SPECIFIC SUGGESTIONS

Blindness, by its nature and vulnerability to pre-conceived attitudes, gives rise to situations that are potentially disastrous if mishandled or overlooked. In addition to active use of a basic understanding, there are many specific things that can be done to avoid such situations. However, the individuality of the patient should be emphasized again, as application of the following suggestions would obviously vary with the person and the particular circumstances. Whether used at the office, the hospital or in social settings, increased rapport is bound to result.

When meeting patient:

1. If desiring to shake hands, simply say, "I'd like to shake your hand," or a similar statement. Don't fumble for his hand.
2. Identify yourself by name. Don't rely on recognition of your voice. This may be necessary after any significant interval of separation particularly if the patient has talked to others during that period.
3. Avoid common tendency to shout. The eighth cranial nerve does not anastomose with the second.
4. Avoid the tendency to talk to the patient through a third party. The phrase, "Ask him to do such-and-such" is used with surprising frequency.

When walking as human guide:

1. To escort him to another area, move to the patient's side and, when facing in parallel direction, offer elbow with a slight nudge. He'll understand.
2. Keep talking to a minimum when moving. Lack of concentration on the task at hand can be dangerous and upsetting for both parties.
3. Give advance warning of approaching steps and indicate whether they go up or down. Wait for patient to locate the first step with his toe before proceeding.
4. When passing obstacles or rounding corners, remember to allow room for *two* people. This usually takes practice.
5. Be particularly careful of half-open doors.

Seating the patient:

1. Halt him about one step from chair, then advise him as to the direction it faces. Pat portion of the chair to give localizing sound.

Examining the patient:

1. Unless there is some other physical disability, don't offer to help him with dressing or undressing. Blindness is no particular hindrance in this operation.
2. Give detailed verbal instructions necessary for cooperation during examining procedures. Avoid the habit of saying, "do *this*" or "over *there*."
3. Warn the patient before touching him, particularly on the face. The reflex withdrawal also seems to be more prominent on the ventral aspect of the body. When intermittent touching is necessary, as in moving a stethescope about, the free hand should maintain light body contact with the patient.
4. Give verbal description of certain instruments to be used. Allowing the patient to handle them will also decrease apprehension.
5. If a third person is in the examining room, be sure patient is aware of his presence, identity, and the reason for his being there.
6. Communication with an assistant or other persons in the room should always be verbal. Gestures can be sensed or heard, and their meaning may be misinterpreted. Avoid signals altogether unless absolutely mandatory.

When guide dog is present:

1. Rest assured that the dog will remain inconspicuous and cause no trouble.
2. If introduced to the dog, give verbal acknowledgement to verify friendship, then ignore the dog. Do not touch the dog.
3. If patient requests human guidance in cluttered, unfamiliar surroundings, always walk on his right side. The dog will heel on his master's left in the accustomed position. Never reach across the dog or come between him and his master.
5. If there is any question concerning proper conduct in the dog's presence, simply ask. This may prevent embarrassment should the dog misinterpret your actions.

PHYSICIAN AS COORDINATOR

In addition to the above suggestions concerning the physician/blind patient interaction, another less specific, but equally important, area of need should be mentioned. This refers to the important function of the physician in the total care of his blind patient and the fact that well-timed, knowledgeable assistance can be extremely rewarding. Many agencies and services for the blind exist, in varying degrees of competence, throughout the state and nation. The physician should be able and willing to refer the patient to the proper agency at the proper time. This he can do with a minimum of effort.

It is never safe to assume that your blind patient has made use of, or even knows about, the available sources of aid that might promote his adjustment and independence. The physician should be equipped to make the necessary referrals and to assume the role of coordinator of these activities. It should likewise be the physician's responsibility to spot the areas of need and, without pushing into psychically guarded territory without invitation, make it known that the door is open for further inquiry.

The major categories of need will be economic, social, physical, emotional, vocational, and the special problem of mobility. The doctor must have information that will facilitate referral of his blind patient's questions about insurance, employment, Social Security, Veterans Administration, counseling, adaptive devices, library services, guide dogs, and a host of others. Of major importance is the rehabilitation center specifically designed for the blind.

The following places are reliable sources of information:

General Information

Bureau for the Blind
620 A Jefferson Street
Jefferson City, Missouri

American Foundation for the Blind
15 West 16th Street
New York, New York

Special Devices

American Foundation for the Blind
15 West 16th Street
New York, New York

American Printing House for the Blind, Inc.
1839 Frankfort Avenue
Louisville, Kentucky

Guide Dogs

The Seeing Eye, Inc.
Morristown, New Jersey 07960

Talking Books and Other Library Services

Wolfner Library for the Blind
(Branch of St. Louis Public Library)
3844 Olive Street
St. Louis 8, Missouri

The Library of Congress
Division for the Blind
Washington, D.C. 20540

American Printing House for the Blind
1839 Frankfort Ave.
Louisville, Kentucky

Textbooks Recorded by Request

National Braille Press, Inc.
88 St. Stephens St.
Boston, Massachusetts

Recording for the Blind
215 East 58th St.
New York 22, N. Y.

Religious Material

Christian Record Braille Foundation, Inc.
Box 6097
Lincoln, Nebraska

In conclusion, it should be stressed that this brief paper is in no way intended to turn the busy practitioner into a Rehabilitation Expert if, indeed, such a thing exists. Stimulation of a more sensitive interest in the blind patient and the mutual satisfaction resulting from proper application of this interest is challenge enough.

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The Missouri State Medical Secretaries and Assistants Society invites all medical secretaries and assistants to attend the Annual State Meeting on April 24-25, 1965, to be held in St. Louis. Headquarters will be at the Bel-Air East. For a detailed brochure of the program and registration card, please contact Mrs. Dorothy M. Anderson, Chairman, State Convention, 950 Francis Place, St. Louis, Missouri 63105.

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Combined Lymphography, Inferior Vena Cavography and Urography

For Retroperitoneal and Pelvic Tumor Evaluation

Case Reports

A review of three possible procedures for evaluating tumors of the retroperitoneal space. The authors conclude that a combination of lymphography, inferior vena cavography and urography provides diagnostic, therapeutic and prognostic data which might not be obtained by any one or even two of the procedures alone. Drs. Wilson, Templeton, Ridings and Jansen are from the Department of Radiology at the University Medical Center. Dr. Wilson is holder of the 1964-65 Cancer Control Senior Clinical Traineeship Award of the USPHS.

TUMORS OF THE retroperitoneal space are difficult to evaluate because of the anatomic limitations of the physical examination of this area. One half of the tumors in this region, excluding those of the kidney and pancreas are due to involvement of the lymph nodes.[1]

The ever increasing use of lymphography,[2, 3, 4, 5, 6, 7] inferior vena cavography,[8, 9, 10] and urography in the evaluation of retroperitoneal and pelvic tumors has demonstrated instances when one of these examinations has been of great value while the other two were of limited value. There is no way of predicting which examination will be of greatest value.[11] It is the purpose of this paper to present examples of the advantages of combined lymphography, inferior vena cavography and urography in the evaluation of retroperitoneal and pelvic tumors.

The standard sequence of examinations in evaluating the retroperitoneal space is bilateral lymphography on one day, and inferior vena cavography and urography on the subsequent day.

LYMPHOGRAPHY

Demonstration of the pelvic and retroperitoneal lymphatic system is accomplished by utilizing the lymphatics in the dorsum of the foot.[12] To allow visualization of the foot lymphatics 4 cc. of 1% local anesthetic and 1 cc. of 10% alphazurine 2G* is mixed in a syringe and the amount required to raise an intradermal wheal is injected into the webs between the first and second and the third and fourth toes of each foot. Five to ten minutes later the skin over the largest blue stained lymphatic channel (Fig. 1A) is infiltrated with 1% local anesthetic and a 1 inch incision is made parallel to the course of the chosen lymphatic. The lymphatic is isolated and meticulously freed of surrounding connective tissue to ensure distensibility. Two black silk ligatures are placed under the isolated lymphatic, care being taken not to roll or twist the channel. The proximal ligature is taped to the foot, temporarily occluding the vessel. After milking the area below the incision to stimulate lymph flow to the isolated lymphatic and to obtain maximum lymphatic distension, tension is maintained on the distal ligature and a 27G or 30G needle is inserted (Fig. 1B). Mechanical injectors are used to inject 10 cc. of ethiodized oil (37% Iodine) into each side over a period of one hour. The injection rate should be held to 1 cubic centimeter each 4-5 minutes to prevent rupture of the injected lymphatic channel and to reduce the chance of pulmonary oil embolism. Anteroposterior stereo roentgenograms of the pelvis, and AP and lateral roentgenograms of the abdomen are taken immediately after injection. These films are primarily for evaluation of the lymphatic channels. The nodes are usually filled within 24 hours at which time

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* Patent Blue V, National Aniline Division, Allied Chemical Corporation.

AP stereo and lateral abdominal roentgenograms are obtained.[13]

Inferior Vena Cavography

After the 24-hour lymphogram films are obtained, inferior vena cavography is performed using polyethylene catheters inserted bilaterally into the common femoral veins by the Seldinger technique.[14] Three projections are used. The first is a supine cross-table lateral of the retroperitoneal space, and the second is an anteroposterior projection of the retroperitoneal space. These roentgenograms are taken with the patient relaxed in quiet inspiration, and the region from L1 to S1 should be included in the two film sequences. The third projection is an anteroposterior of the pelvis with the patient performing the Valsalva maneuver. Twenty cc. of low viscosity contrast medium is injected bilaterally, simultaneously, into each of the catheters in each projection for a total of 120 ml. of contrast material. The contrast material is injected rapidly by hand, and four films are exposed at a rate of one film per second for a total of twelve films. Filming and contrast medium injections are started simultaneously.

Urography

After the inferior vena cavogram catheters have been removed and hemostasis is achieved by gentle direct pressure for about five minutes, urography films are exposed in the anteroposterior, left posterior oblique, right posterior oblique and lateral positions.

Case A

A 45-year-old white female was referred to the Radiotherapy Department in May 1963 for evaluation for treatment of lymphatic lymphosarcoma clinically limited to the left axillary region. She felt well and her weight was stable at 199 pounds. Irradiation to the left axilla, the draining regional lymphatic areas and the superior mediastinum was given. There has been no clinical recurrence of disease in these areas.

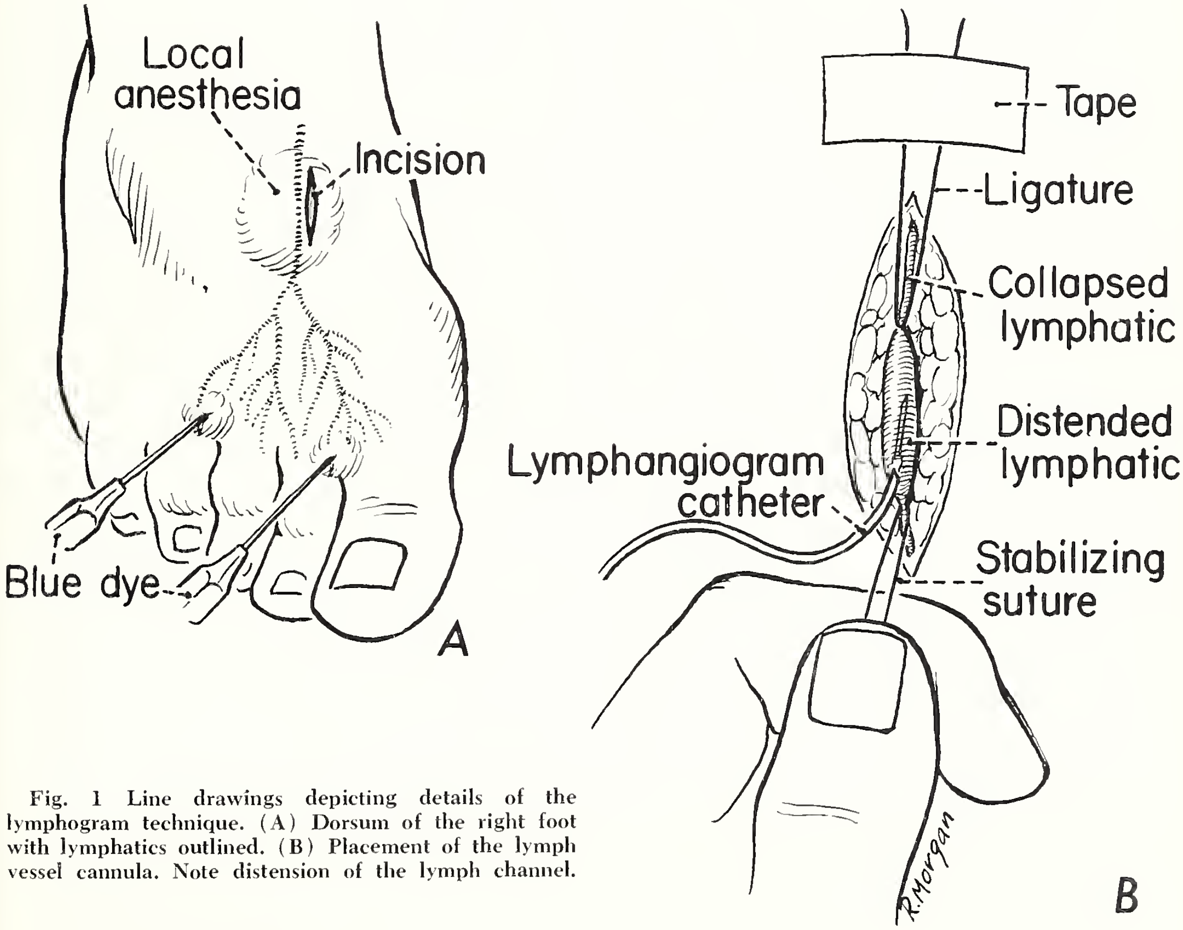
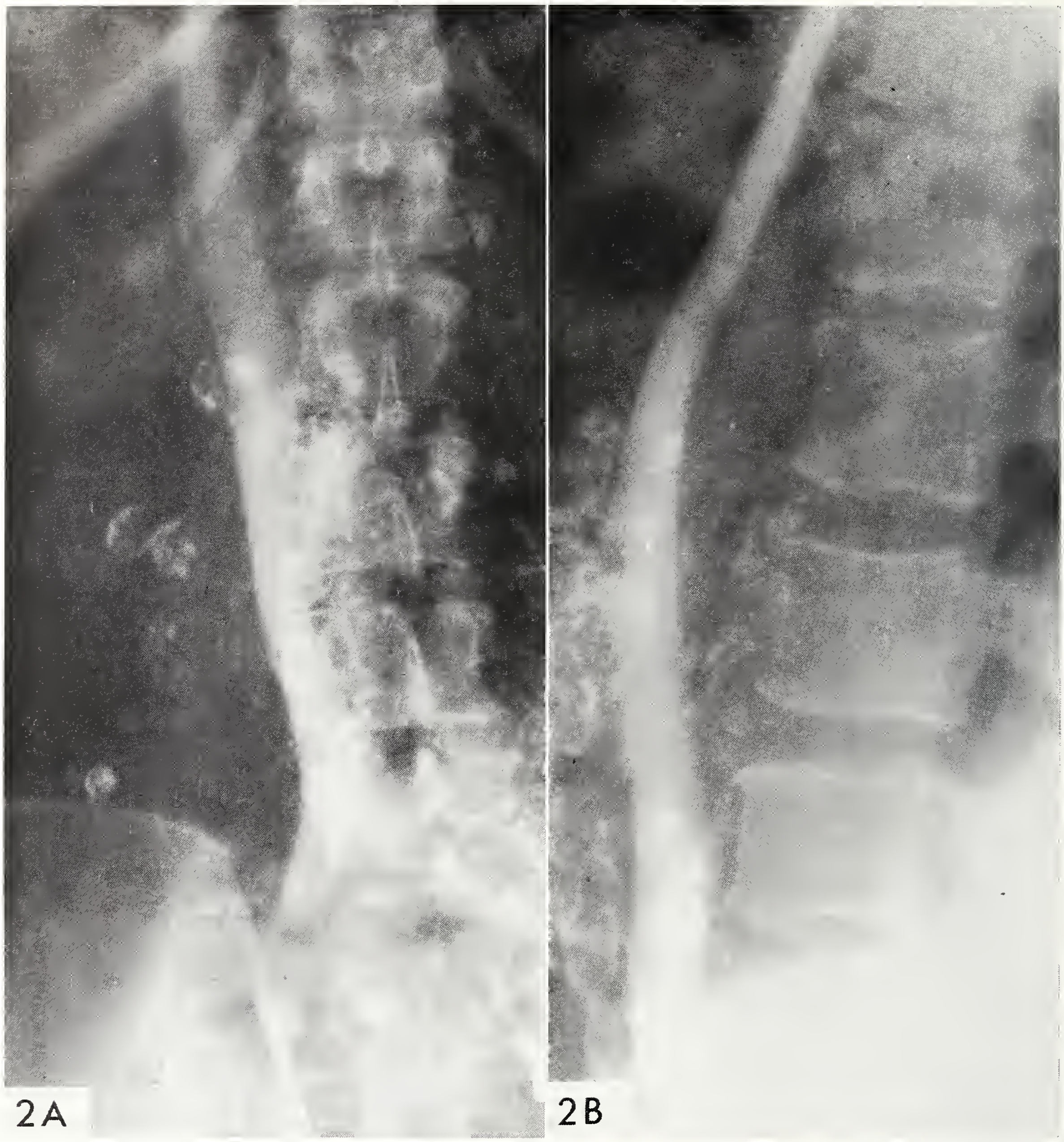


Fig. 1 Line drawings depicting details of the lymphogram technique. (A) Dorsum of the right foot with lymphatics outlined. (B) Placement of the lymph vessel cannula. Note distension of the lymph channel.



Figs. 2A and 2B Patient with lymphosarcoma (Case A). (A) Anteroposterior inferior vena cavogram demonstrates minimal pressure against the left lateral wall of the inferior vena cava at the L3-L4 level by enlarged lacy lymph nodes. (B) Cross-table lateral inferior vena cavogram shows anterior displacement of inferior vena cava at the level of L2 and L3 by a mass posterior to the inferior vena cava. The anteroposterior inferior vena cavogram is normal at this level, and these nodes were not filled on the lymphogram.

On a routine follow-up examination 1½ years later, the patient was asymptomatic. However, on pelvic examination a large pelvic mass was found, mainly on the right. Abdominal examination was unsatisfactory because of the patient's obesity.

Lymphography, vena cavography, and urography were requested for further delineation of the extent of the node involvement (Figs. 2A, B, C, D).

Case B

A 61-year-old white male with chronic lymphocytic leukemia was referred to Radiotherapy for evaluation and possible treatment. He had no symptoms attributable to his leukemia. On physical examination the spleen was barely palpable. There were bilateral, small, axillary and inguinal lymph nodes.

No abdominal or pelvic masses could be felt. He had a WBC of 373,000/mm^3 (98% lymphocytes), a platelet count of 184,000/mm^3 and a hematocrit level of 36 volumes per cent.

Radiation therapy to the peripheral adenopathy was begun. Because of the lack of WBC response, it was suspected that the bulk of his disease might be in the retroperitoneal area (chest roentgenograms showed no significant focus).

Lymphography, inferior vena cavography and urography were requested in a search for additional disease (Fig. 3).

CASE C

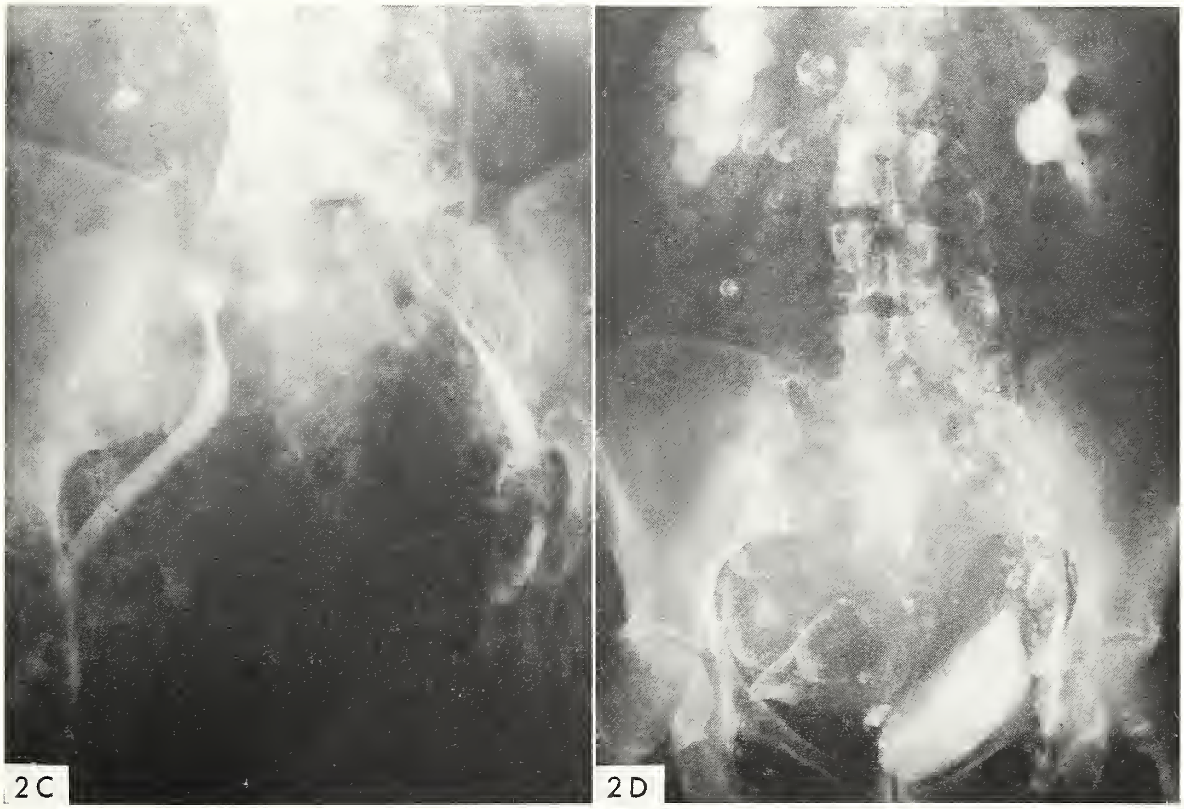
A 68-year-old white male with a two year diagnosis of adenocarcinoma of the prostate was referred to Radiotherapy for evaluation for treatment of severe supra and retropubic pain. On physical examination the findings included a firm, nodular 40-60 gm. prostate and bilateral, small inguinal lymph nodes. There was a vague sensation of suprapubic firmness to palpation. Otherwise no abdominal or pelvic adenopathy was detectable.

In order to better delineate the extent of the disease a lymphogram, inferior vena cavogram and urogram were requested (Fig. 4).

DISCUSSION

That urography is of value in evaluating the retroperitoneal space has long been accepted. The development and utilization of lymphography and inferior vena cavography provide the patient and referring physician with additional valuable diagnostic, therapeutic and prognostic information. Although the most common use of these studies is in the evaluation of lymphomas and leukemias, the demonstration of the presence of retroperitoneal metastases from other neoplasms, such as carcinoma of the uterine cervix, carcinoma of the prostate, carcinoma of the urinary bladder and testicular neoplasms, may greatly affect the patient's management and prognosis.

Lymphography, inferior vena cavography and urography have been combined because one examination will often provide information that the other two do not afford. The lymphogram may demonstrate diffuse retroperitoneal adenopathy which produces no appreciable impression on the inferior vena cava or the ureters (Fig.



Figs. 2C and 2D Patient with lymphosarcoma (Case A). (C) Anteroposterior roentgenogram of the pelvic veins depicting medial displacement and narrowing of the right iliac system and lateral displacement and narrowing of the left iliac system. (D) Anteroposterior urogram showing marked right hydronephrosis, displacement of the bladder to the left and large partially replaced lacy appearing lymph node masses with intact peripheral borders.

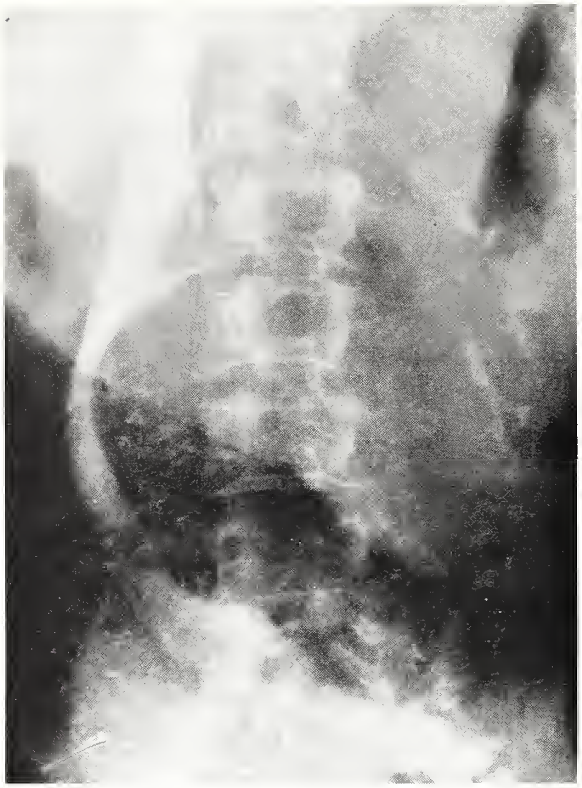


Fig. 3 Patient with chronic lymphocytic leukemia (Case B). Anteroposterior inferior vena cavogram demonstrates marked distortion and displacement of the inferior vena cava to the right by enlarged, lacy lymph nodes. The lymphogram was performed on the previous day.

2A). The nodes in the upper retroperitoneal space are sometimes the site of occult neoplasm, which may not be demonstrated on the lymphogram but may be depicted on the anteroposterior or lateral inferior vena cavogram (Fig. 2B). Nonfilling of lymph nodes may be due to insufficient contrast material, blocked lymphatic channels or completely replaced nodes.

A comparison of Figs. 2D and 4 shows the difference between lymphomatous lymph node replacement and metastatic adenocarcinoma replacement. In the former the nodes are large, lacy and tend to have an intact peripheral border whereas the latter characteristically show irregular areas of replacement of the body and periphery of the node.

Patient relaxation during the inferior vena cavogram is of utmost importance to minimize the production of artifacts and to facilitate physiologic flow of contrast medium. Reproduction of defects on serial films and in multiple projections diminish the chance of mistaking a flow defect, or other transient artifact, for a true pressure defect. The Valsalva maneuver is performed during the pelvic venogram to enhance the demonstration of the internal and external iliac system. Deformities of the inferior vena cava are not significant on this projection.

The moderately large quantity of contrast material used for inferior vena cavography affords excellent urograms.[16] The ureteral course and caliber is readily traced. Unsuspected ureteral deviation, hydronephrosis and bladder displacement are frequently encountered (Fig. 2D).

Patient management and prognosis depend heavily on accurate and complete evaluation of the patient's disease process. The detection of otherwise occult metastases may radically alter the primary treatment regimen and the prognosis. For example, the treatment of Stage I axillary Hodgkin's disease is altogether different from a case in which involvement of the retroperitoneal lymph nodes is found. Response to irradiation therapy may be remarkably enhanced

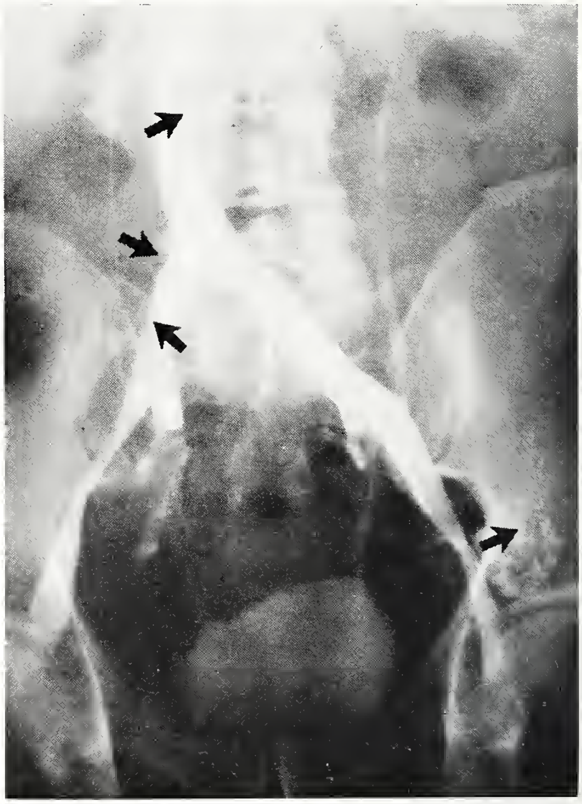


Fig. 4 Patient with adenocarcinoma of the prostate (Case C). Anteroposterior roentgenogram of the pelvic venogram demonstrates medial displacement of both ureters, lateral displacement of the right external iliac vein and constant irregularities of the right common iliac vein and the left border of the inferior vena cava. Note metastatic lymph node at the top of the left acetabulum with areas of border replacement.

by the detection and subsequent treatment of occult neoplasm (Patient B, Fig. 3). This patient with lymphocytic leukemia has had a good period of palliation following irradiation of the retroperitoneal lymph nodes demonstrated by the combined examinations.

The combination of lymphography, inferior vena cavography and urography is of value in evaluating the post-treatment status of these patients. Early diagnosis of recurrent or persistent disease may offer an additional chance for long term palliation or possible cure to a significant number of patients.

SUMMARY

The combination of lymphography, inferior vena cavography and urography gives diagnostic, therapeutic and prognostic information which might not be obtained by any one or even two of the procedures alone. Such evaluation is particularly useful in the management of patients with lymphoma; but is also very helpful in completing the examination of the retroperitoneal region in other types of neoplastic disease.

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In Memoriam

Feller, Charles E., M.D., Springfield, a graduate of American Medical, 1910; member of Greene County Medical Society; aged 80; died December 24, 1964.

Boddy, Robert J., M.D., Mission, Kansas, a graduate of the University of Kansas, 1939; member of Jackson County Medical Society; aged 50; died December 31, 1964.

Johnson, Frank C., M.D., Doniphan, a graduate of the University of Louisville, 1943; member of Butler-Ripley-Wayne County Medical Society; aged 51; died January 9, 1965.

Long, Frank B., M.D., Sedalia, a graduate of Barnes Medical College, 1909; member of Pettis County Medical Society; aged 82; died January 13, 1965.

Wiener, Meyer, M.D., Coronado, Calif., a graduate of Missouri University, 1896; member of St. Louis Medical Society; aged 89; died January 18, 1965.

Diehr, Alvin H., M.D., Ladue, a graduate of National University of Arts and Sciences, 1918; member of St. Louis Medical Society; aged 71; died February 4, 1965.

Cullers, Charles H., Trenton, a graduate of Barnes Medical College, 1909; member of Grand River Medical Society; aged 79; died February 10, 1965.

Marston, Warren G., M.D., St. Louis, a graduate of St. Louis University, 1929; member of St. Louis Medical Society; aged 65; died February 11, 1965.

DONALD A. B. LINDBERG, M.D.
Columbia

Electronic Processing and Transmission
of Clinical Laboratory Data

The present electronic data processing system at the University of Missouri Medical Center captures in computer accessible form the data output of three clinical pathology laboratories: bacteriology, serology, and chemistry.

That such an attempt is worthwhile is based on two assumptions. First, the innumerable individual laboratory determinations constitute valuable data which have a potential scientific value in addition to their contribution to the individual patient. Second, because of the high volume of determinations of most laboratories, the pathologist must come to grips with modern data processing techniques in order to re-capture the data he himself produces.

To solve this problem one must intertwine the laboratory routines and the process of creating "machinable" documents so as to make the two inseparable. Furthermore, it is necessary that the laboratory output be directly susceptible to analysis by digital computers. It follows, therefore, that until suitable data transmission terminals are available, a good laboratory data processing system will in most cases be oriented toward the utilization and production of punch cards.

The system used at present in this laboratory, while far from perfect, complies with the principles and desiderata just noted. The data are assembled in punch card form in the laboratory and are then used to activate teletype transmission equipment (Figs. 1 and 2). These techniques are presented in greater detail below. The result of utilizing this system is that the official report of laboratory examinations is transmitted to and printed at the appropriate hospital ward location by teletype equipment (Fig. 4) and that the results of the determinations are retained in the laboratory in punch card form. In this form the data can be entered directly into an electronic digital computer for purposes of retrieval of significant cases, statistical analysis, or almost any manner of retrospective or continuing study.

Materials and Methods

A report of a laboratory determination is made up of a finite number of fixed statements. These will fall into the following categories:

1. Patient identifying data
2. A combined designation for the biological source of the specimen and name of the laboratory determination which is to be performed on that specimen
3. The result of the determination
4. The date the specimen was received from the patient
5. The date on which the result is being reported (if different from the above), and the name of the physician who stands responsible for the report
6. Certain special designations which will vary between laboratories. Cards containing these statements in printed and punched form are kept in the laboratory.

The report message is assembled from the prepunched cards. Even the results of such exam-

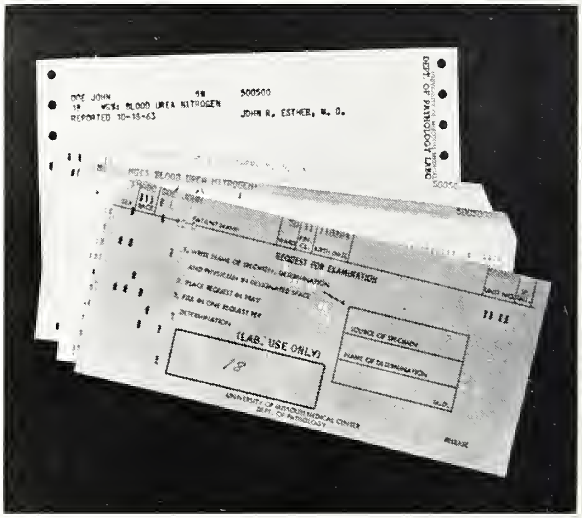

Fig. 1 Prepunched cards which have been assembled to constitute a report. The first card was punched in the Admitting Department. Other intermediary cards were selected by laboratory technicians. At the rear is the final report which is printed at the patient's ward.

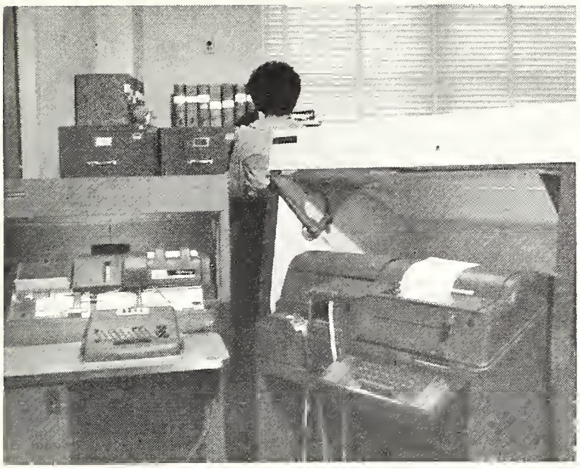

Fig. 2 The IBM 1912 (left) reads assembled sets of punched cards which make up a laboratory report, converts this information into teletype code and generates format machine instructions for the teletype system. The Tel. Corp. ASR 28 (right) translates these signals into printed copy and produces a paper tape record of the message.

inations as bacterial cultures can be made up on prepunched cards. When the results are truly variable, e.g. numerical results of chemical determinations, then such data are entered into the cards by keypunching. The number and types of cards required by each of the laboratories are listed in Table 1. Examples of the messages contained by the prepunched cards are seen in Table 2. The system is described in detail below according to the use of the various types of punch cards.

TABLE 1

TYPES OF PREPUNCHED LABORATORY REPORT STATEMENTS

Prepunched Cards Required	*Bacteriology*	*Serology*	*Chemistry*
Specimen/Determination Cards			
Total number of cards	122	48	94
Types of specimens included	44	2	9
Types of determinations included	3	28	60
Results Cards			
Total number of cards	122	51	102[*]
Names of bacterial species	49		
Qualifying phrases	28	2	8
Single numerical results			64
Multiple numerical results		1	19
Prepunched results	122	50	11
Total number of prepunched cards in all categories	244	99	102
Total number of cards in all laboratories	445		

[*] This includes the 94 Specimen/Determination Cards used in the Chemistry Laboratory, since these provide space for recording the Results of the determination. They are printed in a variety of formats so as to allow for single or multiple results or semi-quantitative results.

USE OF PATIENT IDENTIFYING CARDS

When each patient enters this hospital through the Admitting Department, 30 copies of a punch card are created and placed in an envelope in his chart to accompany him to the hospital floor.

TABLE 2

EXAMPLES OF PREPUNCHED LABORATORY REPORT STATEMENTS

Specimen/Determination	*Statement*	*MU Code No.*
Bacteriology	Urine, clean void—routine culture	2271
	Peritoneal fluid—culture for AFB	3161
Serology	Heterophile antibody 1:224 dilution	2562[*]
	Paratyphoid B agglutinin	4302
Chemistry	— mg% serum barbiturate	1213[†]
	Serum bilirubin direct total ind — — — mg%	1813[‡]
Result		
Name of bacteria	Aerobacter aerogenes	7521
	Atypical acid fast bacteria isolated from culture	3461
Qualifying phrases		
Bacteriology	Less than 1,000 bacteria/ml	5161
	Received in non-sterile container	5261
Serology	Anticomplementary	7402
Single numerical result	See No. 1213 above	[†]
Multiple numerical result	See No. 1813 above	[‡]
Prepunched results		
Serology	See No. 2562 above	[*]
Chemistry	Urine porphobilinogen absent	6433

[*] This statement on a single prepunched card identifies specimen, determination, and result.

[†] Chemistry cards of this type are used to identify specimen and determination and also to provide blank columns into which the numerical result is punched.

[‡] A single card of this type is used for tests which yield multiple results; between the descriptive statements, "direct," "total," "ind," and the numerical result fields is a character which causes the receiving teletype to execute a carriage return and line-feed. The numerical results are printed under the descriptive statements which thus serve as column headings.

These Patient Cards are yellow. Within the fixed fields of the card are found the patient's ward location, his sex, race, name, two digit financial classification, date of birth, and six digit hospital unit number. A single IBM 026 Key Punch with alternate program feature has sufficed for creation of these cards.

In order to request a laboratory examination, the ward clerk, or the physician if he wishes,

Dr. Lindberg, Assistant Professor of Pathology and Director of the M.U. Medical Center Computer Program, explains the operation of the electronic data processing system which is used in connection with clinical pathology laboratories. The paper objectively appraises the benefits and shortcomings of the present system, and gives rise to speculation as to future potential of such systems. This work was supported in part by U.S.P.H.S. Grants HM-00374 and 1-Sol-FR-05387-01.

need only write on the face of the Patient Card the name of the specimen which is being sent, the name of the determination requested, and the name of the ordering physician. In the case of material for culture, a completed Patient Card is sent to the laboratory along with the specimen. In the case of routine blood chemical determinations, the cards alone are sent to the laboratory and the venepuncture team later obtains the specimens.

USE OF SPECIMEN-DETERMINATION CARDS

We utilize prepunched cards for 44 types of specimen designations. When the rare situation demands further identification, it is possible for the laboratory secretary to select a specially coded Specimen-Determination Card and enter on the key punch the appropriate English language identification. From the point of view of data handling, there are only three types of determinations which may be requested. These are "Routine Culture," i.e. for ordinary bacteria, "Fungus Culture," and "Culture for Acid Fast Bacteria." Thus we have provided 122 types of prepunched Specimen Determination Cards, which allow for 44 types of specimens and three types of determinations. These cards are stored in open wall-mounted racks or pigeon holes (Fig. 3). The racks and all receptacles such as Work Envelopes are color coded: white for Routine Culture, green for Fungus Culture, or blue for AFB Culture.

Serology Laboratory: Specimens are either serum or cerebrospinal fluid. The number of determinations is 28. The total number of Specimen-Determination Cards is 48.

Chemistry Laboratory: Specimens are generally blood, but also include duodenal contents, urine, sweat, etc. Sixty determinations may be requested. The total number of sensible combinations, allowing for multiple simultaneous determinations such as the serum electrolytes, is 94 combination Specimen Determination Cards.

USE OF RESULTS CARDS

Bacteriology Laboratory: Whenever possible prepunched Results Cards are used, e.g. the names of bacterial species, the statements "no growth," "normal flora," etc. The variable results such as the susceptibility to antibiotics or the colloidal gold patterns must be entered on a key punch.

Forty-nine types of prepunched cards include the species name or group designation for essentially all common bacterial organisms. Not included are rarities such as *P. pestis.* In addition to the cards with the names of micro-organisms, the Results portion of the message can include a variety of prepunched statements relating to quantitation of growth (e.g. "moderate growth," "Gr. than 10^6 bacteria/ml," "normal flora") or to procedural affairs (e.g. "No acid fast bacilli seen on smear from specimen. Culture in progress").

A Results Card contains the name of a bacterial species in print and also in punched form. In addition the cards contain the printed names of the fourteen antibiotics against which organisms may have been tested for susceptibility and a space in which the technologist may write "R" for resistant or "S" for sensitive. Reporting of colloidal gold precipitation by cerebrospinal fluid also requires that the technologist write the figures into the face of a partially prepunched card.

Serology Laboratory: The Results Cards for the serology laboratory contain prepunched statements such as "positive at 1:64 dilution" and "nonreactive." In some cases it has been feasible to include prepunched on a single card designations for the specimen, the determination, and the result. An example is "serum VDRL-nonreactive."

Chemistry Laboratory: The results of the cephalin flocculation and hemoglobin electrophoresis are sufficiently simple so as to allow the creation of prepunched Results Cards which will include the total result. Almost all other chemical results, being numbers, must be written onto the face of a punch card, the card included in the packet of prepunched cards which makes up a message for purposes of transmission, and the numerical result must then be punched into the deck using an IBM 026 Card Punch.

In the case of 64 types of chemical determinations there is a single numerical result, e.g. "42 mg%" in the case of a blood glucose determination. The technologist has received the Patient Card along with the blood specimen. The Patient

Card already has written on it the description of the type of specimen and the name of the determination requested. In addition there is a blank box printed onto the face of Patient Cards. The technologist writes the numerical result of the determination, e.g. "42," onto the Patient Card in the box. The manner of handling punching of such a variable is detailed in the next section. In 11 cases a "present" or "absent" type of result report can be prepunched. In these cases the designation of specimen, determination and result are all prepunched onto the same card. There is another type of card required for the results of 19 of the types of chemical Specimen-Determinations. These 19 yield multiple numerical results. For example, it is customary to report serum bilirubin determinations in terms of indirect, direct and total mg% of bilirubin. In this case a special printed and partially prepunched Results Card is utilized. It contains the formatting of the bilirubin result in punched form and provides three labelled boxes in which the technologist must write the numerical results. This type of card is selected by the laboratory secretary when the specimen is received, and the name and unit number of the patient are written onto the special bilirubin Results Card before the latter is given to the technologist. Thus, for this sort of determination the punched Patient Card is not used until the actual teletype transmission of the message.

KEYPUNCHING VARIABLE DATA

From the previous sections one can see that the reports have been built up by assembling decks of prepunched cards. Each card contains a single phrase or component of the complete report. Each message as it is assembled is placed in a special card tray or directly into the card hopper of an electrical key punch. All cards for all reports must pass through the key punch after having been assembled. These machines operate under the control of a feature known as a Program Drum which controls the movement of cards through the reading and punching stations and also controls and can evoke duplication from the previous card, printing or not printing, and skipping. This feature permits the operator to punch variables into precisely the correct column of each card. By careful design of the Program Drum Card, reports from all three laboratories can be intermixed and passed smoothly through this step. The keypunching accomplishes two objectives. First, the six digit hospital unit number which occurs only in the Patient Card is automatically read and punched into each of the subsequent cards in that patient's report. The second purpose of the key punching "pass" is to enter the truly variable information which could not have been contained in prepunched form and which was written onto the punch cards by the technologist performing the determination.

MISCELLANEOUS MESSAGE CARDS

Bacteriology Laboratory: Bacteriology Accession Numbers are issued to each culture. These are strictly sequential, are prepunched cards, and can simply be included in the message packet. Five digits are allowed because there are an average of 22,000 cultures per year.

Chemistry Laboratory: Certain determinations are linked to a time of day, e.g. blood samples for glucose determination in a patient who is receiving initial therapy for diabetes mellitus. Other determinations must be identified as having been done before or after a procedure such as extracorporeal dialysis or peritoneal dialysis. Prepunched cards are available for these situations and may be included in a message deck without any special trouble. Time of day must be written onto such a card and punched into the card. But even this is treated by the key punch operator and the Program Drum control as if it were simply another variable numerical result.

SIGN OFF CARDS

A single prepunched card is used to indicate the date of the report and the name of the pathologist or pathology resident who is responsible for supervision of the particular laboratory on that day. The same card serves to indicate the date the specimen was received for the great majority of chemistry specimens, since these determinations are completed on the same day.

TELEGRAPHIC TRANSMISSION

In the previous sections, we have seen the prepunched cards assembled into messages, the variable information written onto the face of the cards and later punched into the same or following cards in the deck. Transmission of the message to the hospital ward is now a very simple step. The deck of cards is placed in the card hopper of an IBM 1912 and the "Transmit" switch is depressed. This device is a modified key punch itself. It functions, however, solely as a card reader, converting the computer-sensible coding of the punched card deck into the type of coding required by the teletype system. A Teletype Corp. Automatic Send Receive Model 28 is ca-

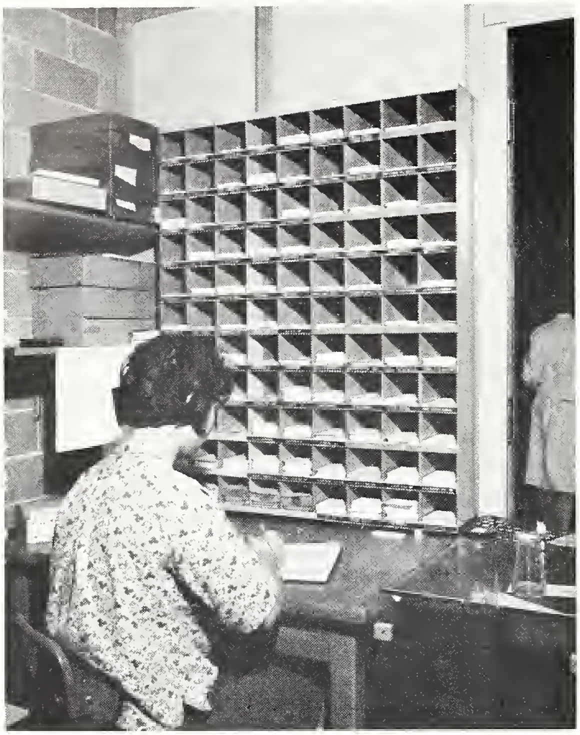

Fig. 3 As a specimen is received in the bacteriology laboratory, a technician selects a prepunched card which describes the anatomical site from which the specimen derived and the determination which is to be performed.

bled to the 1912 card reader (Fig. 3) and is capable of transmitting directly to the hospital wards or nursing stations as the cards are passed through the reader. In hospital operation, however, we do not permit this "on line" transmission.

A monitor copy of the data is printed by the telegraphic sending unit. This is read, approved or corrected, and signed by the pathologist in charge of the appropriate laboratory. The authorized and now official report is transmitted from the perforated paper tape, which was created automatically at the same time the monitor copy was being printed. The equipment is capable of transmitting the authorized tape of one set of reports at the same time that it is reading new message cards and printing a monitor copy of a completely different set of reports. Transmission and printing of reports takes place at 100 words per minute.

The receiving teletypes (Fig. 4) are slave units which can only print what is sent them. They are connected to the laboratory by ordinary telephone circuits. A "scanning" circuit searches each message for a ward location code and allows printing of the report only at the appropriate ward. The reports are printed on gummed, continuous, sprocket-feed paper stock seven inches wide, which contains a transverse perforation each four inches. All reports fit nicely in the 7 × 4 inch form. Printing is commenced at the top line of the form. Thus, the unused portion can be covered up by other reports.

The Role of the Computer

The computer is not required for transmission of the reports to the ward locations. It is only after this has occurred that the message cards are submitted to the computer. During the first year of operation of the present system we utilized a general computer facility of the University which is physically removed from the hospital. This facility housed IBM 1620 computers. The assembled messages were carried in cases to the computer. This was a satisfactory arrangement so far as data recording was concerned. Because of the success of this system and the needs of other unrelated hospital projects, the Medical Center installed an IBM 1410 computer system in the hospital itself.

Three functions in the system are performed by the computer (Fig. 5). First, it reads all of the message cards and eliminates all the alphabetical material. In reality the prepunched cards

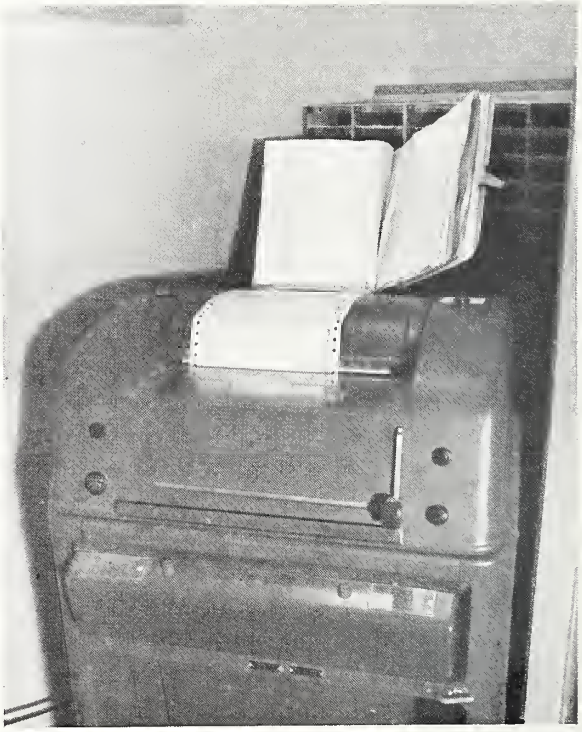

Fig. 4 Tel. Corp. RO 28 is the receiving teletype unit which prints official laboratory reports for patients on the ward. For purposes of this illustration, a patient's chart has been placed on the printer.

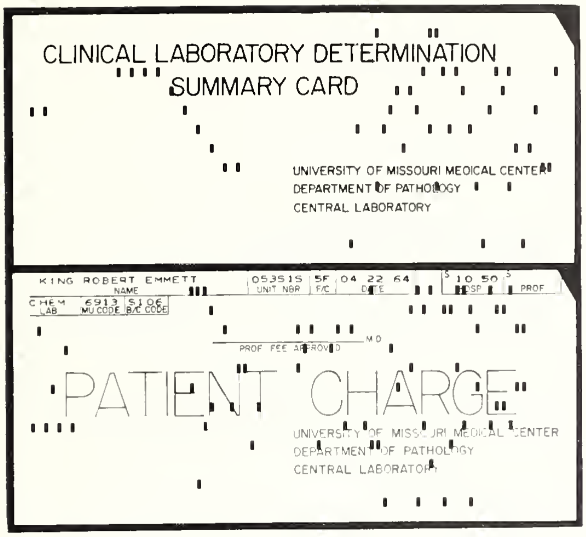

Fig. 5 Processing by the 1410 Computer results in two final cards. Each laboratory report is summarized on a single card (top); hospital charges and professional fees are coded on another card (bottom). The Computer also records all of this information on magnetic tape for later search and retrieval if needed.

containing the English language messages also contain a four digit code number which has been prepunched into a code filed in columns 77 to 80. The transmission devices are arranged so as to ignore this code field; whereas the computer is programmed to ignore the prose portions of the cards and to recognize and summarize the code portion and the numerical and "R" or "S" variables.

The second computer function is that of producing billing cards. Each Specimen-Determination Card includes a unique four-digit code. Each code corresponds to a pre-determined hospital charge and, in some cases, a professional charge.

The third function of the computer is the most important, that is recording of the data on magnetic tape and retrieval of data from the system. This is done in a variety of formats according to the purpose of the inquiry. The inquiry routines will be described in a separate publication.

Results

Operation of the system described has resulted in rapid accurate delivery of legible reports to the appropriate ward stations. Along with this have been surprisingly few operational problems.

The problems have centered around card jams in the key punches. This seems to be attributable to inexperienced operators and less than perfect installation and maintenance. While annoying, neither factor is a permanent problem and should not be considered a legitimate part of a systems design problem. A more sanguine aspect of this dilemma is the fact that 20 individual laboratory employees have been permitted to operate the various pieces of equipment in the transmitting system. It now seems quite clear that individuals who are competent to perform ordinary technical and clerical jobs in a clinical laboratory are quite competent after minimal on-the-job training to assemble punch cards, operate key punches and guide the teletype transmitters. This enthusiastic view can be entertained only because the speed with which such tasks are performed in a hospital laboratory setting is not so important a factor as it is in a traditional tabulator-type processing operation. In the hospital setting, accuracy is the more important consideration. Acceptance of this automatic data processing system has been very good both by laboratory personnel and the clinical physicians.

The natural concern over accuracy of transmissions has been ill founded. Authorization of each message by a resident physician occasionally detects an inaccuracy before it is transmitted. The greatest weakness in the system is the possibility of a technician or secretary selecting the wrong prepunched results card and that such an incorrect message might be transmitted. This has happened only once during the first 18 months of operation.

The supplies and rental costs of transmission of reports and for capturing the patient data in computer accessible form are given below. These are generally fixed costs and independent of the volume of use. Each message consumes two teletype forms (0.1 cent each) and an average of 3.4 punch cards (0.1 cent each). A Teletype Corporation ASR transmitter is required ($177/month) and an IBM 1912 Card Reader ($176/month). In addition we require two IBM 126 Printing Card Punches ($146/month). Nine Receiving Teletypes serve sixteen wards and the Medical Record Room. Each receiving unit costs $49/month. The rental prices cited are at commercial rates. The cost of operating a computer for retrieval and analysis of information is great. That cost is, however, related directly to the amount of study to which the data are put for patient care, teaching, and research.

Discussion

The major original goal, machine accessibility of the laboratory data, has been achieved. It has been possible to retrieve data to answer questions such as the two examples which follow. "What are the unit numbers of the patients who have had blood urea nitrogen determinations in excess of 60 mg%?" "In which cases were staphylococci isolated from sputum samples or wound swabs and of these how many strains were resistant to penicillin?" Answers to these questions were obtained by two methods: using the IBM 1410 computer, having written a separate program for these questions, and secondly, simply by sorting the punched summary cards on an IBM 082 Card Sorter.

The present system has some inherent limitations. First, the approach dedicates one column of a punch card in the message packet to each character or number which must be transmitted. Thus, multiple cards per message are required, and the speed of transmission becomes a limitation. Second, even though each laboratory report is ultimately coded into a single punch card, access to the laboratory records for research purposes must necessarily involve manipulation of a considerable number of punch cards. For example, this laboratory performed 440,000 determinations in fiscal 1963. This represents 440,000 punch cards. A small electronic computer such as the 1620 can perform such a search in 223 minutes. The limitation here is simply the difficulty of transporting so many cards to a computer. Since more than one search was contemplated, the logical solution was to record the punch card data on magnetic tape. With the 1410 computer system the entire record can be reviewed in about four minutes. The third limitation of the present system is that there is some difficulty in generating certain desirable formats for the arrangement of the data on the printed report.

All of these problems will be eliminated by integrating the present system more fully into the 1410 computer system in the University of Missouri Medical Center. Major modifications to the present system will be required in order to utilize our "in house" computer to maximum effect. The reason for reporting the present system, even though it will constitute only an interval system, is that despite the limitations mentioned it has been effective and reasonably economical. For the purpose of encoding laboratory data and creating bills, it has required only about 30 minutes per day of computer time, and this initially at a remote computer location. It seems likely that many hospital laboratories could utilize such a transmission and data retrieval system because of the availability of nearby computers on a basis of brief scheduled usage. One advantage of this system should not be overlooked. There is no theoretical limitation on the distance between the central laboratory and the receiving ward station. The latter could be located in a distant hospital or a distant city. Naturally the amount of computer time spent in retrieving, examining, and evaluating the laboratory files has been greatly in excess of 30 minutes per day, but this use is clearly separable from the actual encoding and transmission of data.

Complete lists of card headings and designs, program drum cards, and the computer programs which were developed in this system will be readily available to interested colleagues.

Summary

A system is described for the transmission and computer retrieval of clinical laboratory data. This utilizes prepunched cards, an IBM 1912 Card Reader and Teletype Corporation transmission devices. Reports for the hospital chart are printed on continuous, perforated teletype forms. The laboratory retains a single punched Summary Card for each message. The latter is generated by an IBM 1620 or 1410 computer, which also generates billing documents. The peculiar virtue of this system is that the computer is required for only 30 minutes daily and that it can be remote from the laboratory. Retrieval of data is effected through manipulation of the punched Summary Cards by an electronic sorter or by use of a computer. In the latter case, the computer time required depends strictly on the amount of analysis of the clinical laboratory data.

Serious doubt concerning the usefulness of gamma globulin as a means of preventing rubella among pregnant women has been expressed by the American Academy of Pediatrics. Two Committees in a joint statement advised physicians that they should make decisions and recommendations for the management of pregnant women exposed to German measles "on the assumption that there is still no firm evidence that immune globulin is effective in reducing the risk of congenital anomalies."

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The Importance of Neurodermatitis

Neurodermatitis is a form of eczema which is produced by scratching and which can be prevented if early eczema is controlled. The author sees scratching or similar irritation as the most important segment of a vicious circle involving chronic eczema and neurodermatitis, and he outlines the most effective methods for breaking that circle. Early therapy apparently is the foundation for the most effective management. Dr. Anderson is from the Division of Dermatology, University School of Medicine.

ALMOST EVERYONE HAS ECZEMA sometime in his life, if not as "diaper rash" in infancy, then as "winter itch" of the legs in old age or "house wives' hands," nonfungal "athletes foot," poison ivy dermatitis, intertrigo or some other eczema during the middle years. Fortunately, most affected persons have a mild acute eczema and recover without the help of their physician. The physician sees only that fraction of eczema which is severe, unsightly or, most important, chronic. We are concerned with two questions: "How does a normally self-limited mild eczema become chronic?" and "How may chronic eczema best be managed?"

Eczema is a noninfectious inflammation of the epidermis characterized by microvesicles which begin as focal areas of cytolysis in the outer malpighian layer of the skin.[1] Soon thereafter, spongiosis and round cell infiltrates become diffuse in both the epidermis and the dermis. Clinically, at this stage the eczema is red, swollen, warm and extremely pruritic—the ancient signs of inflammation. But in addition to the signs of inflammation, there is oozing and crusting from numerous microvesicles. Eczema has a diffuse margin, is superficial, patchy or sheet-like in configuration, is not greasy and does not result in atrophy or follicular enlargement. With experience, these clinically distinctive features can be used to distinguish eczema from other inflammatory skin diseases, such as impetigo, seborrheic dermatitis, miliaria, lichen planus, lupus erythematosus, herpes simplex, zoster or dermatophytosis. Toxic erythemas, edemas and urticaria tend to involve only the dermis and have no microvesiculation. Erythema multiforme and other diseases in which vesicles appear with dermal vasculitis tend to have sharp migratory borders, distinctively shaped lesions and a characteristic distribution. Early acute eczema may be considered in one of these clinical groups which represent the two principle sources of external insult:

1. Irritant Group
   a. Common
      Prototype: "red dishpan hands"
   *b. With inherited hyperirritability, the atopic state
      Phototype: Atopic dermatitis of childhood
   *c. In association with chronic edema
      Prototype: Poison ivy dermatitis
2. "Allergic" Group
   a. Common
      Phototype: Poison ivy dermatitis
   *b. "Infectious" eczema
      Prototype: Eczema with chronic draining otitis media
   c. Endogenous group; secondary to internal infection, or sensitivity to drugs or metabolites of neoplasm
      Prototype: Cutaneous reaction to gold therapy

Early or acute eczema is self-limited if the patient is otherwise healthy. Within one to two weeks healing begins, and in four to eight weeks only residual pigment or thickening of the skin may remain. But this natural course is followed only if the causative insult is not continued. Early eczema becomes chronic because repeated insults to the skin are not prevented. After about eight to 12 weeks of continuous injury, the eczema will be aggravated without further external irritation, symmetrical areas of the skin erupt also and the disease becomes diffuse. The eczema may now be considered active, disseminated and chronic, with the presumption that an "autoimmune" mechanism or "id" reaction is operating internally. In the above classification of early eczema, the types most likely to have a prolonged "dangerous" course are marked by an asterisk. The chronic eczema patterns may be considered as:

1. Localized or "fixed" forms
2. Generalized forms (ID forms)
   a. Contralateral spread
   b. Nummular
   c. Erythrodermatitis

Management of Chronic Eczema

In general, the therapy of early eczema may be conservative because the natural prognosis is good, but the management of prolonged eczema should be vigorous because the natural course is toward a generalized severe disease. Of the types of early eczema listed in the classification, chronicity is least likely to result from true contact allergy. The common type of irritant eczema has only a slightly worse prognosis, but when the atopic state is present the possibility of developing chronic eczema is greatly increased; hence, the value of the recognition of the atopic state. As explained in an excellent monograph by Baer,[2] the recognition of the atopic person is fundamental to the correct management of early eczema.

Prolonged stasis eczema, "infectious" eczema and any "id" reaction are most likely to lead to generalized chronic eczema and therefore merit prompt intensive treatment and possibly hospitalization. The best management of chronic eczema is prevention by the adequate treatment of prolonged early eczema.

Control Irritation: Once the injured skin has become eczematous, irritants of all types previously regarded as harmless can now aggravate the disease. The patient does not realize that his eczema has exceeded the limits necessary for natural healing and now requires extremely strict "skin rest" to restore natural healing. Patients are likely to cheat on this rule. They reason that working half time should at least lead to their getting well half as fast. The patient even may choose to add irritation. Often they overtreat themselves by harsh washing, the application of strong solutions of iodine, powerful "athletes foot" remedies or animal liniment, reasoning that some mysterious and noxious invader will be killed or possibly the trouble will be "burned out." Too frequently also, the overtreatment is recommended by physicians in the form of strong ointments, hot compresses and other irritants.

The need to be absent from the job or the housework for many weeks is a burden to the patient and his family. Sustained loss of income or services in the home may seem to be intolerable but a premature return to work usually aggravates the situation. "Skin rest," strictly practiced, leads to the earliest recovery.

Bed rest at home with air drying may be required if sweating is profuse or if the eczema is in folds of skin, such as on the anogenital area. Air drying can be improved by directing a flow of cool air from a fan or a hair dryer. All exposures to soap and water must stop. Simple 0.9% saline may be used to remove dirt or crusts. Saline may be used also as cool wet dressings to help control pruritus. A useful saline is made by adding one level teaspoon of ordinary table salt to one pint of cool water. To control pruritus, systemic antihistamines and analgesics are superior to topical phenol or menthol. Frequent lubrication with a plain oil-in-water emulsion is tolerated on a non-oozing eczema, and in this stage all other topical medications may be avoided. The oozing eczema surface is best treated with intermittent cool open wet dressings.

Reduce Stasis: Stasis of the circulation in the legs is a familiar problem resulting from aging and inherited predisposition, heavy lifting or prolonged standing over many years, recurrent minor infections in the feet with lymphangitis, multiple pregnancies, thrombophlebitis, fractures, other injuries to the legs and, by far most important, obesity. Impaired circulation causes edema of the skin over the ankles, thereby predisposing to irritation, injury and the development of eczema. Prevention is achieved by weight control, proper use of supporting stockings and the expert management of the skin at the time that the first swelling of the ankles is noted. Treatment of eczema in the presence of stasis involves correction of the edema by elevation of the legs initially and through pressure dressings. Later, the regular use of pressure stockings or boots may be necessary for the duration of the patient's life. In some few cases, surgical correction of varicose veins may be advisable, but such procedures rarely correct the problem without the use of external support to the legs. Obesity is a discouraging problem, and few doctors claim much success in helping patients to loose substantial amounts of weight permanently.

Avoid Allergy: Contact allergy may be the original cause of eczema, as in the case of poison ivy dermatitis, or may develop secondarily from the use of a sensitizing medication on eczema of another type. Penicillin, sulfa and furazolidone ointments are quite sensitizing, as are some antihistamine, analgesic, and other antibiotic ointments. These medications may be safe if used briefly and infrequently, but if used regularly for a substantial length of time sensitization will become a common problem. The principal method of diagnosis is a routine patch test to be read at 48 hours. Careful patch testing to a routine set, as well as all of the ointments which the patient with chronic eczema brings into the doctor's office, may surprise the therapist and be of great importance in the management of the patient.

Control Infection: The skin has excellent natural mechanisms to prevent infection but when the cornified barrier of the skin is disrupted, as in eczema, bacteria eventually colonize the skin producing irritation or infection. Usually, the insulting organism is staphylococcus aureus but occasionally streptococcal infections are seen. Candida albicans is the yeast most frequently found in infected eczema. Even mild infections greatly aggravate the eczematous state. Although antibiotic treatment may be necessary, plain saline wet dressings often can remove the crusts and edema causing the re-establishment of the cornified barriers of the skin whereby the skin regains its natural protections against infection. Most physicians routinely use topical antibiotics in the management of chronic eczema. If so, safeguards against allergic sensitivity should be routine also, including a careful history and selected patch tests.

Neurodermatitis

It is not surprising, especially today when claims for the psychosomatic causation of almost every disease are being made, to find that many people assume that psychic disturbances are the cause of the disease which dermatologists call neurodermatitis. In fact, neurodermatitis is a variety of eczema which is produced by scratching or the mechanical equivalent of scratching. Most people scratch within "safe" limits, that is, by scratching they produce no eczema. Even when these people develop eczema, they may be cautious about scratching. If, however, the eczema becomes prolonged and pruritus is severe, the patient is likely to become "nervous" and more vigorous about excoriation.

The habit of persistent and excessive scratching is easily acquired. Like the cigarette habit, scratching relieves a need, gives pleasure and the disadvantageous results are postponed sufficiently for the habit to become fixed before any reform is considered. "Excessive" excoriation is defined as scratching sufficient to produce or aggravate an eczema. When the eczematous state is maintained principally by scratching, the diagnosis is neurodermatitis. Neurodermatitis easily becomes infected because the skin is broken deeply and regularly. The infection aggravates the pruritus, causing more scratching, more medication and more edema. Scratching is most important in the vicious circle of chronic eczema (Fig. 1).

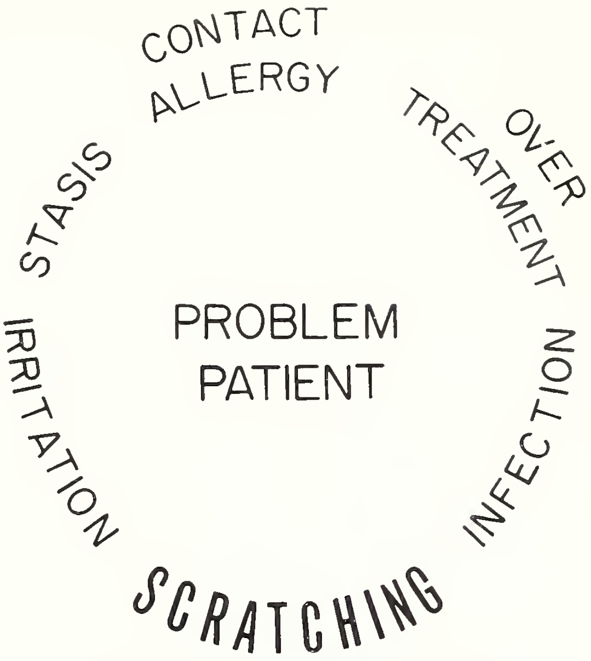

Fig. 1 The vicious circle of chronic eczema.

Neurodermatitis may be prevented if early eczema is controlled promptly. Neurodermatitis may be prevented by explaining to the patient the consequences of failing to restrain the impulse to scratch while at the same time giving adequate medications to help control this pruritus. The patient should know that cool or cold wet dressings will give substantial relief of itching. The application of hot water will give only temporary relief followed by severe exacerbation of itching. Adequate sleep at night under sufficient medication may insure reduced pruritus during the next day. The well rested, well encouraged, well managed patient usually will avoid neurodermatitis. It is often valuable to suggest to the patients that their fingernails be cut very short or even that they wear light cotton gloves during the night to reduce the chance of injuring the skin. Some patients will tolerate a protective dressing over the eczema to be worn at night if the patient's conscious controls over scratching are ineffective. When the doctor is aware of neurodermatitis as the most important factor in producing chronic eczema, he will direct his efforts to the problem with his usual ingenuity and the patient will surely benefit.

Summary

Because the important causes of chronic eczema are known, treatment may be directed to prevent the development of chronic eczema. The informed management of irritant, contact allergy, infection, stasis and, most important, neurodermatitis can result in the prevention and control of most chronic eczema problems.

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Leonard T. Furlow, M.D.

President's Message

The sudden and serious illness of Tom O'Brien has deprived us of his services during the present session of the Missouri General Assembly. Because he has done this job so well over the years, we had no adequately trained replacement; but with the help of many people . . . staff, committees and friends . . . we are moving along in our legislative efforts.

There is, however, a valuable lesson to be learned, i.e., legislative planning should begin at least a year *before* the session opens. We must be sure that this lesson is heeded in the future.

This is my final message as President of MSMA. I would like to express to the Association my gratitude for being allowed to serve and to the Council, officers, committees, members, the Auxiliary and the entire staff my thanks for their invaluable help.

Let us all meet together in St. Louis on April 4.

Leonard T. Furlow

Recommended Dosage of Lomotil Liquid to Control Diarrhea

File:✓ Diarrhea

LOMOTIL®

INITIAL LOMOTIL LIQUID DOSAGE*

Age	
3-6 mo.	½ tsp. t.i.d. (3 mg.)
6-12 mo.	½ tsp. q.i.d. (4 mg.)
1-2 yr.	½ tsp. 5 times daily (5 mg.)
2-5 yr.	1 tsp. t.i.d. (6 mg.)
5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adult	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per average teaspoonful.
Note: After diarrhea is controlled the initial dosage can usually be reduced to meet the requirements of the individual patient.

LOMOTIL® TABLETS/LIQUID

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride .... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate .... 0.025 mg.

Precautions
Lomotil is an exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Cautions and Side Effects
Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

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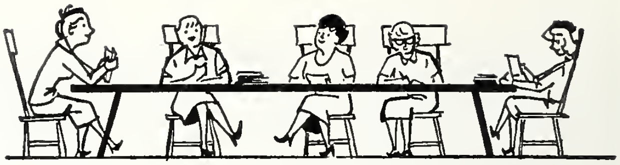
Woman's Auxiliary



As you read this, the Annual Session probably will be over and we will all be full of gratitude to the St. Louis County Auxiliary for making it a most memorable one. But since I am writing this as February makes its departure, I can only dream! However, I *know* it will not be amiss to say, "Hats Off!" to you all for a wonderful convention, and especially to Venus Schattyn and Mil Diehr, co-chairmen, for their hours and hours of planning with their fine committees. Also a big heart-felt "thanks" to all those who helped in *any* way to make my task easier!

Mrs. R. W. Bohnsack

It has been a hard task the past eight months, but my burden has been lightened by the warm response I have had from anyone whose help I enlisted, by the wonderful encouraging letters I have had and the fine friends I have gained. I shall hope to be able to carry on the next year with a little more self-confidence, and to do the kind of a job that you expect of me.

I sincerely appreciate those who got their reports and Point System sheets to me on time. How I wish each one of you county auxiliaries would report *something*—even if you feel you cannot compete with some of the larger auxiliaries! Each one of you does so much in your own individual communities. I know it—but I'd like to have it down in black and white to report to National and brag about you! My report is due May 1, so if you'll send me yours right away, I may still get it in!

I was so happy to receive a letter from Virginia Muench telling me that she had been able to reorganize the Franklin-Gasconade-Warren group on February 2 with 16 members! Isn't that wonderful? Congratulations to you all! We're sure you'll be a fine addition to our Auxiliary and we're so happy to welcome you, along with the new Lincoln-St. Charles group which now boasts 31 members!

The Medical Self-Help Training Course night class, which we began in January here, is graduating 45 members March 11. Another class in the afternoons with about 35 enrolled was started February 17 by popular demand! We have a fine teacher—Mrs. John La Fever—and she has done a wonderful job with not as much help from me as I would have liked to have given her, since my husband's illness. Why don't you start this in your community?

A letter from Mrs. William H. Evans, our National President, states that the AMA is establishing an intensive and continuing campaign to improve the immunization of the American people against Tetanus and is enlisting the Woman's Auxiliary to aid in distributing posters in strategic places—schools, department stores, banks, hospitals, and other locations. These posters are being sent to the County Community Service Chairmen. Be sure to check with your local Medical Society to obtain approval of the project, and then decide on the best date for implementation.

We are all urged by Dr. Ward, as well as Mrs. Evans, to begin our own personal letter-writing campaign today telling our Congressmen why we favor the Herlong-Curtis Eldercare Bill and urging them to reject the King-Anderson Bill. Immediate action is of the utmost importance. Perhaps by the time you read this, it will be too late. If so, I hope *you* did *your* part anyway. If it is not too late—PLEASE DO IT NOW!

The National Convention will be held in New York at the Americana Hotel June 20-24. I hope many of you are planning to be present when our own Betty Sutter will become President of the Woman's Auxiliary to the A.M.A. I'm sure I will "bust a button" with pride when she is installed!

Please get your lists of new officers to me just as soon as possible so I can get the Roster and stationery ready for printing. Many of you have already done so. If anyone—officers, directors, committee chairmen, county presidents, or past presidents—has a change of address, please let me know. And don't forget to include your *zip codes!*

'Nuff said! HAPPY EASTER to you all!

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supportive oral anabolic therapy • potent • well-tolerated

Disabling illness or injury at any time of life can invite a slowdown in the natural anabolic processes or acceleration of catabolic processes, resulting in a "wasting" of protein and minerals needed for tissue repair. Loss of weight and appetite, strength and vitality, may be the evident signs of this process, frequently accompanied by a lowering of mood, interest and activity. The older the patient, the more pronounced may be the signs of debilitation. A potent, well-tolerated anabolic agent plus a diet high in protein can make a remarkable difference.

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...a new oral anabolic agent, combines high anabolic activity with outstanding tolerance. Although its androgenic influence is extremely low*, women and children should be observed for signs of slight virilization (hirsutism, acne or voice change), and young women may experience milder or shorter menstrual periods. These effects are reversible when dosage is decreased or therapy discontinued. Patients with impaired cardiac or renal function should be observed because of the possibility of sodium and water retention. Liver function tests may reveal an increase in BSP retention, particularly in elderly patients, in which case therapy should be discontinued. Although it has been used in patients with cancer of the prostate, its mild androgenic activity is considered by some investigators to be a contraindication.

Dosage in adults, *usually 1 tablet t.i.d.;* young women, *1 tablet b.i.d.;* children (school age), *up to 1 tablet t.i.d.;* children (pre-school age), *½ tablet b.i.d. Shows best results when administered with a high protein diet. Available as scored tablets of 2 mg. in bottles of 100.*

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*The therapeutic value of anabolic agents depends on the ratio of anabolic potency to androgenic effect. This anabolic–androgenic activity ratio of Winstrol is greater than that of all the oral anabolic agents currently in use.

New Members

Francisco Barrios, M.D., 5641 Potomac St., St. Louis, has become a member of St. Louis Medical Society. Dr. Barrios is a native of Oaxaca, Mexico, received his preliminary education at National University of Mexico and his M.D. degree at National University of Mexico in 1938. He specializes in pathology.

Dwayne Bergmann, M.D., 6150 Oakland, St. Louis, has become a member of St. Louis Medical Society. Dr. Bergmann is a native of Ethel, Missouri, received his preliminary education at the University of Kansas and his M.D. degree at the University of Tennessee in 1963. He specializes in surgery.

D. Joseph Demis, M.D., 660 S. Euclid, St. Louis, has become a member of St. Louis Medical Society. Dr. Demis is a native of New York, New York, received his preliminary education at Union College and his M.D. degree at Yale University in 1957. He specializes in dermatology.

Donald Eldenburg, M.D., 700 S. Limit, Sedalia, has become a member of Pettis County Medical Society. Dr. Eldenburg is a native of Florence, Missouri, received his preliminary education at LaSierra College and his M.D. degree at Loma Linda University in 1963. He specializes in general practice.

Robert H. Felix, M.D., 1402 S. Grand, St. Louis, has become a member of St. Louis Medical Society. Dr. Felix is a native of Downs, Kansas, received his preliminary education at the University of Colorado and his M.D. degree at the University of Colorado in 1930. He specializes in psychiatry.

Samuel W. Hardy, M.D., 539 N. Grand, St. Louis, has become a member of St. Louis Medical Society. Dr. Hardy is a native of St. Paul, Minnesota, received his preliminary education at College of St. Thomas and his M.D. degree at St. Louis University in 1958. He specializes in internal medicine.

Marvin Kahn, M.D., 751 E. 63rd St., Kansas City, has become a member of Jackson County Medical Society. Dr. Kahn is a native of Baltimore, Maryland, received his preliminary education at Johns Hopkins University and his M.D. degree at Johns Hopkins University in 1958. He specializes in internal medicine.

Ozgoncu Kamuran, M.D., Northland Medical Bldg., St. Louis, has become a member of St. Louis County Medical Society. Dr. Kamuran is a native of Turkey, received his preliminary education at Inonu Lisesi, Iamir, Turkey, and his M.D. degree at Medical School of Istanbul University in 1951. He specializes in obstetrics and gynecology.

George A. Luther, M.D., 135 W. Adams St., St. Louis, has become a member of St. Louis County Medical Society. Dr. Luther is a native of Keokuk, Iowa, received his preliminary education at Central Methodist College and his M.D. degree at Vanderbilt University in 1959. He specializes in orthopedic surgery.

Geoffrey W. Miller, M.D., 915 N. Grand, St. Louis, has become a member of St. Louis County Medical Society. Dr. Miller is a native of Seattle, Washington, received his preliminary education at Seattle University and his M.D. degree at St. Louis University in 1957. He specializes in radiology.

Thomas J. Mitchell, M.D., 335 N. Commercial, St. Clair, has become a member of Franklin-Gasconade-Warren County Medical Society. Dr. Mitchell is a native of Washington, D. C., received his preliminary education at the University of Louisiana and his M.D. degree at St. Louis University in 1961. He specializes in general practice.

Joseph A. Murney, M.D., 210 Elm St., Washington, has become a member of Franklin-Gasconade-Warren County Medical Society. Dr. Murney is a native of Springfield, Missouri, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1953. He specializes in thoracic surgery.

John H. Ploussard, M.D., 215 Oak St., Poplar Bluff, has become a member of Butler-Ripley-Wayne County Medical Society. Dr. Ploussard is a native of St. Louis, Missouri, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1950. He specializes in pediatrics.

Robert F. Peterson, M.D., 4949 Rockhill Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Peterson is a native of Enid, Oklahoma, received his preliminary education at Northwestern State University and his M.D. degree at the University of Oklahoma in 1957. He specializes in pathology.

William S. Sly, M.D., 660 S. Euclid, St. Louis, has become a member of St. Louis Medical Society. Dr. Sly is a native of East St. Louis, Illinois, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1957.

Walter R. Stafford, M.D., 150 N. Meramec, St. Louis, has become a member of St. Louis Medical Society. Dr. Stafford is a native of Oma-

(Continued on page 315)

"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests: they all have to measure up to the same standards. Therefore, all registered nurses are alike.

That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

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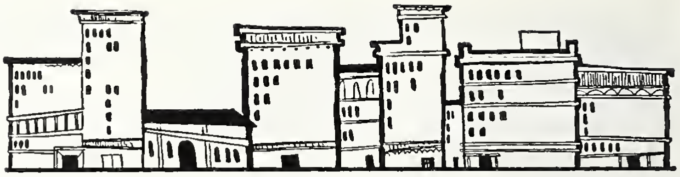

ST. LOUIS UNIVERSITY

Dr. Robert H. Felix, dean, St. Louis University School of Medicine, was honored as the 1964 winner of the Samuel Rubin Award for outstanding achievement in the mental health field. The award was presented by the Postgraduate Center for Mental Health, New York on Friday, February 26.

In announcing Dr. Felix' selection, Dr. Lewis R. Wolberg, dean and Medical Director of Postgraduate Center, cited Dr. Felix' "inspired leadership in planning, organizing, and guiding the National Institute of Mental Health from its inception to its present position as the greatest single force shaping American psychiatry."

Dr. Thomas F. Frawley, Director of the Department of Internal Medicine, has been reappointed consultant in endocrine research to the Veterans Administration. In this capacity, he works with the V.A. in the establishment and conduct of research programs in the field of endocrinology. Dr. Frawley heads the Division of Endocrinology at the St. Louis University Hospitals.

Dr. Robert M. Kark, professor of medicine, University of Illinois, and graduate of the Royal College of London Medical School, will deliver the annual John Auer lecture on April 22. He will speak on the "Natural History of Glomerulonephritis." The lecture is open to interested physicians.

Dr. Henry Oppenheimer, associate professor of clinical medicine, has been named president of the St. Louis Diabetes Association.

Dr. F. X. Paletta, professor of clinical surgery and Director of the Section of Plastic Surgery, lectured and operated at the University of Mexico Hospital in Mexico City Feb. 22 to Feb. 27. He spoke on cancer, trauma, congenital deformities and plastic surgery.

WASHINGTON UNIVERSITY

Three new physicians have recently joined the faculty of the School of Medicine and three other faculty members have received promotions.

New to the faculty are Dr. Irwin Schultz, assistant professor of medicine, who will be on the Washington University service at St. Louis City Hospital; Dr. Ray Brinker, assistant professor of radiology, and Dr. Herbert Silver, instructor in pathology. Dr. Silver is a pathologist at the Jewish Hospital of Saint Louis.

Dr. Adolph Cohen and Jay Enoch were promoted to research associate professors of ophthalmology; Dr. George Klinkerfuss was promoted to assistant professor of neurology.

The second Samuel Grant Visiting Professor of Medicine was in residence at the School of Medicine the week of February 22. Dr. Richard V. Ebert, professor and chairman of the Department of Medicine at the University of Arkansas School of Medicine participated in the teaching program of the Department of Internal Medicine. Dr. Ebert presented a lecture for medical students and faculty members on pulmonary emphysema in addition to attending daily conferences and ward rounds.

The professorship honors the well-known St. Louis physician and alumnus of Washington University Medical School, Dr. Grant, who has been a member of the School of Medicine faculty for many years and has served as president of the Medical Alumni Association. The fund for the professorships comes from contributions from former patients and friends of Dr. Grant.

UNIVERSITY OF MISSOURI

A rural village in Iran will be the work site this spring and summer for a young woman medical student from the University School of Medicine. She is Janis L. Burgess, a junior, and one of 28 American medical students who has received a Smith Kline & French Laboratories Foreign Fellowship from the Association of American Medical Colleges. Miss Burgess' grant is $1,791. The fellowships will enable Miss Burgess and the others to broaden their clinical training in cultures very different from their own.

Dr. Herbert S. Goldberg, professor of the Department of Microbiology, visited the Eli Lilly Company in Indianapolis for discussion of progress on development of a new antibiotic discovered at the University.

Dr. Donald F. Kausch, assistant professor of Medical Psychology, visited the staff at the Neurology Department, University of Wisconsin School of Medicine in January. This department has an active neuropsychology laboratory which

(Continued on page 315)

effects and precautions: The transitory
siness which may occur with hydroxyzine
usually disappears spontaneously in a few
with continued therapy, or is correctable
sage reduction. Dryness of the mouth may
en with higher doses. Involuntary motor
ity has been reported in hospitalized
nts on higher than recommended doses.
oxyzine HCl may potentiate CNS depres-
, narcotics such as meperidine, barbitu-
, and anticoagulants. In conjunctive use,
ge for these drugs should be decreased.
use drowsiness may occur, patients should
utioned against driving a car or operat-
langerous machinery. **Parenteral Solution**
utions and contraindications: This dosage
is intended only for I.M. or I.V. adminis-
n and should not, under any circum-
es, be injected subcutaneously or intra-
ially. When the usual precautions for I.M.
ion have been followed, reports of soft
reactions have been rare. I.V. adminis-
n should be slow, no faster than 25 mg.
inute, and should not exceed 100 mg. in
ingle dose. Particular care should be used
ure injection only into intact veins; a few
nces of digital gangrene occurring distal
e injection site have been attributed to
ertent intraarterial injection or periarte-
extravasation, both of which should be
ded. **More detailed professional informa-**
available on request.

New Members (cont'd.)

ha, Nebraska, received his preliminary education at the University of California at Los Angeles and his M.D. degree at St. Louis University in 1957. He specializes in ophthalmology.

John W. Tosh, M.D., 217 Oak St., Poplar Bluff, has become a member of Butler-Ripley-Wayne County Medical Society. Dr. Tosh is a native of Mounds, Illinois, received his preliminary education at Murray State College and his M.D. degree at the University of Tennessee in 1954. He specializes in general surgery.

David J. Tschetter, M.D., P.O. Box 830, St. Joseph, has become a member of Buchanan County Medical Society. Dr. Tschetter is a native of Clayton, South Dakota, received his preliminary education at Yankton College and his M.D. degree at the University of Chicago in 1936. He specializes in radiology.

Arthur T. Tuma, M.D., 215 Oak St., Poplar Bluff, has become a member of Butler-Ripley-Wayne County Medical Society. Dr. Tuma is a native of Dickinson, North Dakota, received his preliminary education at Montana State University and his M.D. degree at Creighton University in 1957. He specializes in radiology.

James W. Willoughby, M.D., 1125 Grand Ave., Kansas City, has become a member of Jackson County Medical Society. Dr. Willoughby is a native of Kansas City, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at Washington University in 1947. He specializes in allergy.

Granville J. Womack, M.D., 11121 Oak Lake Ct., St. Louis, has become a member of St. Louis County Medical Society. Dr. Womack is a native of Quanah, Texas, received his preliminary education at the University of Oklahoma and his M.D. degree at the University of Oklahoma in 1952. He specializes in aviation medicine.

From the Medical Schools (cont'd.)

will serve as the model for a similar facility to be established at the University of Missouri Medical Center.

Dr. James M. A. Weiss, professor and chairman of the Department of Psychiatry, spoke to a combined group of physicians and nurses at the greater Kansas City Mental Health Foundation. The lecture defined those attitudes and functions which differentiate trained psychiatric nurses from other nursing personnel based on research projects conducted both at the University of Missouri School of Medicine and at Washington University Schools of Medicine and Nursing. Approximately 60 professional people attended the lecture.

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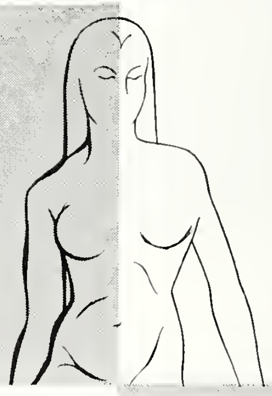

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levamfetamine succinate (Releasing the drug over a 6-10 hour period)	21 mg.

Each **CYDRIL** (levamfetamine succinate) Tablet contains:

levamfetamine succinate	7 mg.

Side Effects: Rare—C.N.S.** stimulation minimal, occasionally cardiovascular and gastrointestinal reaction may be observed.
Contraindications: Severe hypertension, angina pectoris, hyperthyroidism and Raynauds disease.

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The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded to Signemycin
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Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

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EDITORIALS

CONFERENCE OF NOTE

(The Second National Conference on Cardiovascular Diseases was held in Washington, D. C., in November of 1964. The following report and comment on the Conference was prepared by ***J. M. Martt****, M.D., chairman of the MSMA Committee on the Study of Cardiac Diseases.)*

The most noteworthy accomplishment of this meeting, which was attended by more than 750 physicians, medical educators, research scientists, and others in the health-oriented disciplines, was the masterful compilation of data which had been assembled by the participants prior to and during the conference. Starting with about 2,000 pages of information compiled and circulated prior to the conference (the purpose of which was to summarize the progress in cardiovascular diseases since the first conference in 1950, and to specify the "unmet needs" for further research—this report is, in itself, a masterpiece of condensation), and following reports submitted from 49 separate discussion groups which met on the first two days of the conference, a few highly capable individuals headed by Drs. Irving Page of Cleveland, Charles E. Kossmann of New York, and J. Gordon Barrow of Atlanta, Georgia, assisted by several equally qualified individuals, worked throughout the night of November 23 in order to present this mass of information to the conference on the morning of the 24th in three short reports of less than thirty minutes each! Needless to say, for this presentation most of the accumulated data required deletion; however, the entire proceedings are to be edited and published in bound volumes early in the New Year.

The conference was entirely too broad in its coverage for any one person in attendance to grasp more than a fragment of the information; summarization, therefore, was appreciated and well received.

In the realm of research, the primary "unmet needs" were concluded to be the need for more basic research in atherosclerosis, pulmonary emphysema, hypertension, stroke, congestive heart failure, and rheumatic fever. A call was made for the implementation of "screening programs" to allow early detection of persons with these diseases, or with a predisposition to them. It was emphasized that "simplified techniques for screening and routine diagnosis" of pulmonary insufficiency can be developed on the basis of existing knowledge.

In the field of community service there is a need for public awareness of the importance of routine physical examinations. It was recommended that intensive-care units be established in all hospitals treating significant numbers of patients with myocardial infarction. Techniques of mouth-to-mouth resuscitation should be widely taught to the public, and closed-chest cardiac massage to dentists, nurses, and members of rescue squads.

The section devoted to education concluded that the most pressing need is personnel and facilities which will greatly increase the "gross national output of doctors, research scientists, and all other members of the health team concerned with the heart."

A program of lay education to keep the public informed of simple health facts and of the objectives of research is advised, although "great caution" must be exercised before embarking on broad programs such as are aimed at reducing heart attacks "if there is some question about the validity of the hypotheses on which the program is based."

We must now recognize a new nursing specialist —the cardiovascular nurse with capabilities in the care of the cardiac patient in the recovery room, the cardiovascular laboratory, and in intensive-care units.

Motivation of the physician for continuing education remains paramount and it is suggested the "periodic testing for proficiency and for relicensing" might serve to stimulate such motivation.

Dr. Abel Wolmann, of Johns Hopkins, in summing up the work of the conference, emphasized that it is not enough to make recommendations, but rather "too little attention was paid to the *how* of implementation of proposals" in 1950 following the First National Conference on Cardiovascular Diseases, and that this would also appear to be a shortcoming of the present conference. He also stressed that the physician be oriented throughout his career to the preventive aspects of heart disease.

An interesting reaction of the American press to the recent conference is reflected in an editorial by Louden Wainwright in *Life* magazine who, in commenting on the reluctance of the profession to uniformly support a program of lay education on the possible relationship of the daily American diet to coronary heart disease, stated: "I'd feel a lot better if the experts would take a moment off from research and give us the benefit of some *immediate* advice."

Missouri Medicine *welcomes comments and contributions from its readers. Correspondence should be addressed to the Editor with the understanding that such correspondence may be rejected or published (in entirety or in part) at the discretion of the Editor. With the exception of scientific papers, correspondence usually cannot be acknowledged or returned.*

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Editorials (cont'd)

THE VIEW FROM THE BOTTOM OF THE TOWER (IVORY, THAT IS)

Slings and arrows are being hurled in a very vociferous, if not always telling, fashion against the modern medical school. One very recent diatribe housed within the confines of a handout sheet sent from a drug house to the practicing physicians, but directed toward the medical students, intimated that the whole educational process was so bad that the student who was never going to read this might just as well give up and start at a different school. It is quite true that the person who sees the medical school from the outside can only judge what goes on within the sacred walls by pronouncements, for the most part unofficial, that emanate from recent students and faculty who speak only from a given point of view. Occasionally, deans and other official spokesmen are quoted out of context in order to make a more startling and eye arresting article in the medical press.

What, if any, is the substance behind these pronouncements? A university must be something beyond bricks and mortar, and the faculties must comprise both individually and collectively, teachers, researchers, educators and, in the case of the medical school, practitioners who began with the same background that the clinician facing the public every day has. No one is more conscious of the shortcomings of medical education than medical educators themselves. This does not mean that efforts are not being carried on continuously to improve, expand and enrich this education. Medical education of the 60's is just as different from the medical education of a generation ago as are the practice of medicine and the new drugs used in daily practice.

About two years ago, one medical school presented an offer to this author that he might be in a position to give some help in the education of general practitioners. Having accepted that offer, the adventures in the following year involved in finding a replacement to take over my practice served to underscore the diminished number of men willing to enter general practice and the number of communities actively seeking men to take vacant practices. Some of these observations, both prejudicial as well as actual, were accumulated during one year after becoming a teacher in a modern medical school. If I were to wait any longer before recording some of these observations, it is quite possible that the prejudices of a lifetime spent in general practice might be outweighed by a need for academic conformity. Consequently, before tenure and discipline have wrapped the change around me, won't you join me for a brief tour?

First, let's take a look at the view of the inside of the tower itself. The very reasons for existence, students, present us with a species that ought to be carefully examined.

The medical student of the 60's is an individual who is a product of all the educational institutions at our disposal. He is far more intelligent than we were at the same level of training. He has had from one to two years more formal education in premedical science than the student of a generation ago. He is either married or about to be married to one of those efficient and alert little creatures who looks like an Audrey Hepburn who has learned to cook. Their joint flirtations with financial factors have had considerable impact on what they choose to do following medical school graduation. Let no one think that the medical student of 1965 is a blue-eyed "pink," nor for that matter is his undergraduate cousin. This year the average college student is so conservative that he makes the John Birch Society look like a communist cell. This social concern reflects some of the things that the student may say at home or to his family physician, things that sometimes give the home town a picture of the medical school. He will very systematically and carefully play a game with each member of the faculty as to where the faculty member thinks the student should take his internship. He is not above playing one faction against the other to check to see who comes out on top.

Coincidentally with the waning of the national hysteria following Sputnik and the final establishment of who the first men on the moon are going to be, has come a sharp increase in medical school applications with an accompanying improvement in the premedical grade averages of these students. The medical student of this year will be far superior to his brother who has graduated. This, in itself, places no small load upon the medical school faculty. If you are faced with an entire class whose medical college aptitude tests have been in the 600's, you have to do a far better job of teaching than you did with those who ranked in the upper 400's to 500's.

Another object that comes into view inside the tower is the faculty. The modern medical school faculty member is for the most part fulltime and salaried. This may or may not mean that he has had a given length of time in practice outside the walls. This by no means limits his ability to meet clinical problems. It may limit, to some degree, what he is able to tell his student about the relationship of economic facts on the outside; but if he has any degree of scientific interest, he is quite willing and capable of interpreting these data when reported to him by a referring physician or other members of the faculty who have had clinical experience. Charged with the job of doing the best possible job of teaching, he will use every means at his disposal to do this. The view of medical practice on the outside can of course be made only on the basis of variable data. Patients who come to the University Hospital certainly reflect extremes of disease, economic background and successfulness of medical management. Consequently, any official pronouncement of the quality of medical care outside the walls is conditioned upon this. It is tough to be sick when you don't have money.

This last mentioned observation is highly unoriginal, but having made it, I feel required to advance a suggestion that we must develop better medical care in all areas, to the indigent as well as to the affluent. Since we, as a practicing profession, must meet the demands of a nation and world for medical care, we must aid in devising a plan to do this. Merely beating down the proposed plans that have occurred to opportunistic politicians is barely the beginning. We alone know individual resources. We will have to guide and structure any national scheme that occurs in the future, so let us design it.

There is also an external view from the ivory tower. This can best be seen by stepping outside the walls where the view is almost exactly the one which I had when I entered the tower. The first and most pertinent view is that of general practice itself. There has been a lot of talk on the term "general practice" as distinguished from "family practice." It is not the purpose of this essay to form discrete definitions for each. In general, we are talking about rural and urban practice. In urban areas there is usually adequate surgical support and, consequently, the problem of surgery for the general practitioner becomes largely an individual matter. If the surgical training of the general practitioner has been complete and the practitioner is desirous of continuing as such, artificial barriers should never be interposed. However, there is a great deal more required in granting surgical privileges to the practitioner than his own desires, either professional or economic. Certainly, all surgery needs to be developed better, carried further and surgeons should be permitted to fight their own battle among themselves. If it develops in the future that there is one set of surgeons that works better cephalad to the navel and another set that works better caudad to the navel, then let it so be. For the foreseeable future we will need to train general practitioners to practice in rural areas who will have to do a modicum of the immediate and commonplace surgery. I do not believe, however, that the failure to include or not include surgery in the training of the general practitioner has anything to do with the dwindling numbers of general practitioners and/or family doctors. I am afraid that we, as modern physicians, pure though we may think we are, have allowed ourselves to be influenced by that great American god, status. If it colors our own thinking, think what it has done to medical students. Last year when I was queried on the subject of a specialty rating for a family practitioner, my immediate response was that I didn't think it would ever amount to much.

What would someone amount to who didn't have a specialty rating? At this same time in my development I also clung to some ancient philosophical proverbs as "virtue is its own best reward" and "the meek shall inherit the earth." Now I know that a specialty rating for the family practitioner is inevitable. It is inevitable because this is the only way that one doctor is able to recognize the standing of another doctor in a given area. It means that the practitioner has attained a level of postgraduate professional education which has a standard market value to other doctors, to hospital administrators and ultimately to the patient himself. This has been the historical development of medicine in the United States. This is the level with which the majority of American physicians are now able to interpret what other physicians have said as far as background and skill. Boards will be the only thing that will induce the man who has finished his internship to carry out training to a definite reward. I don't say that this is what will be required to level off the various disciplines of training. Whether or not this is formally accomplished by those who now represent general practice, it will be done in the next ten years by those people who are graduating at present. There is ample evidence that the pot which is brewing this mixture is simmering along at a fairly good rate and lacks only sufficient fermentation to bring this brew to complete development.

I am also convinced that one of the best fields for the development of this general practice training will come in the smaller hospitals which have been left off the internship list because of failure to meet their quotas. With the strong relationship they have with their own communities, they are far better able to provide training needs than maybe the University hospitals. It is possible for University hospitals to develop a board program under existing structures, either utilizing the preventive medicine board or leading to a degree program such as has been developed in some foreign countries. It would take patience for the new physician during his interview for hospital privileges to reply, "Yes, I have my American Board of Preventive Medicine in the field of Medical Care." This could take as much explaining as it did work to complete the degree.

There are definitely areas in which general practice teaching may be added to our medical schools without fuss, pain or fetters. The lifeblood of any teaching program in the clinical years lies in the outpatient clinics of the medical schools. Staff supervision of students in all these clinics is woefully short. Here is where the part-time teacher could fill a great need. However, he must be prepared to remain on duty at his assigned time and not be called away in midmorning or in the middle of a student's commitment to a patient because of an insistent phone call. This may help you understand why medical schools have had to rely on full-time teachers. Last year in the United States there were more than 900 budgeted faculty positions in medical schools which were not filled because of an absence of qualified applicants. The system under which many of us were taught by part-time physicians who came to the medical school, delivered a majestic one hour lecture and then disappeared has almost disappeared from the scene. There will still be some of this by necessity in the basic sciences, but most of the pontificating is now saved for the rubber-chicken

(Continued on page 326)

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1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press *243*:578 (June 29) 1960.

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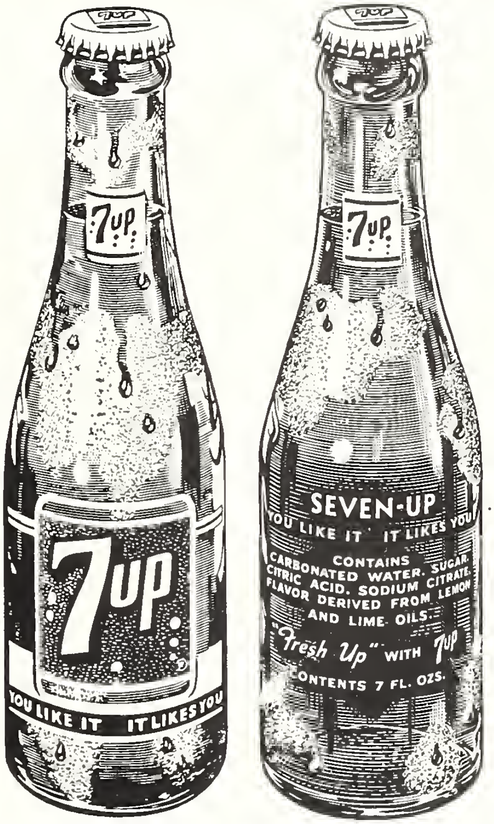
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Missouri Academy of General Practice

The Board of Directors met in Jefferson City on January 24 under the chairmanship of Edson C. Carrier, M.D., Kansas City, Mo. Those present were: Drs. Carrier; R. Stacy Long and Charles Fowler, Kansas City; Barney Finkel, W. A. Mullarky, P. C. Hall, Walter Gunn and Charles Nester, St. Louis; Leroy Miller and W. C. Allen, Columbia; Doyle McGraw, Bolivar; C. G. Stauffacher, Sedalia; Roy Pearse, Nevada; C. A. McBurney, Slater; Paul Roberts, Sweet Springs; John Crowe, Cape Girardeau; Ben Eisenmann, New Haven and Mr. Ray McIntyre, St. Louis.

A report was received and approved from a special committee, for proposed revisions of the Constitution and By-Laws of MAGP. These suggested revisions will be presented for adoption at the Annual Business Meeting of MAGP on Saturday morning, October 23, 1965. Members of this special committee were: Roy Pearse, Jr., M.D., Nevada; P. C. Hall, M.D., St. Louis; Cecil Leitch, M.D., Blue Springs. All members of the MAGP will receive a copy of the proposed new Constitution and By-Laws prior to the 1965 Annual Session.

New member applications approved by the Board on January 24 were: Associate members: Bernie Parsons, Albany; Ted P. Smith, Bowling Green; Donald Eldenbury, Sedalia; Mark M. Tendai, Kirksville. Active members: John Canella, Hannibal; Glenn Hogencamp, Ballwin; Glenn A. Horner, Marceline; Troy O. Morgan, Jr., Albany; John K. Holcomb, Cape Girardeau.

Members of the MAGP Board of Directors appear to be pleased as they consider general Academy business and the scientific program for the 1965 Annual Session which will be held in St. Louis next October.

Among the Committee reports given was that of the Education Committee Chairman, A. G. Karraker, M.D., Farmington, outlining the scientific program for the MAGP 1965 Annual Session at the Sheraton-Jefferson Hotel, St. Louis, on Saturday and Sunday, October 23-24. Four scientific sessions will be held Saturday morning. These will be round table discussions on “Coronary Heart Disease,” “Urological Problems,” “Gastrointestinal Complaints” and “Infections in Children.” A symposium on Obstetrics and Gynecology is scheduled for Saturday afternoon; a General Scientific Program, Sunday Morning; and a symposium on Chest Diseases, Sunday afternoon.

The Board approved MAGP co-sponsoring with MSMA, a luncheon meeting for the junior class of Missouri University Medical School on May 5, to discuss general practice and medical organization membership.

Editorials (cont’d.)

circuit in the somnolent post-cocktail hours at the County Medical Society meetings.

When you view the most thorough clinical teaching now, it will involve the smallest number possible: one student, one teacher, one patient. It reminds you of the quotation by President Garfield that the ideal educational system was “a student on one end of a log and Mark Hopkins on the other.” We must take pride in the fact that Mark Hopkins was a physician himself. We need only substitute a patient for the allegorical log and the picture fits the present day. This, I think, is the great value of an extramural preceptorship.

Small seminars, student participation, research and discussion serve much better in the teaching of the facts of family practice. The family practitioner who joins these will be wary of the Pharisee, but interpret as he knows best.

Indeed this ivory tower does admit a lot of light. May the thirsty traveler be assured that he can slake his thirst better at the fountain in the courtyard than in the murky waters of the encircling moat.

In conclusion, the reading physician is adjured to think twice of his medical school and think kindly. They are getting money from other places. What they need more are your best wishes, your best patients and some of your best effort. Education *is* getting better, students *are* getting smarter, medical graduates *are* better trained, and eventually the patient will get a better deal.

A. SHERWOOD BAKER, M.D.
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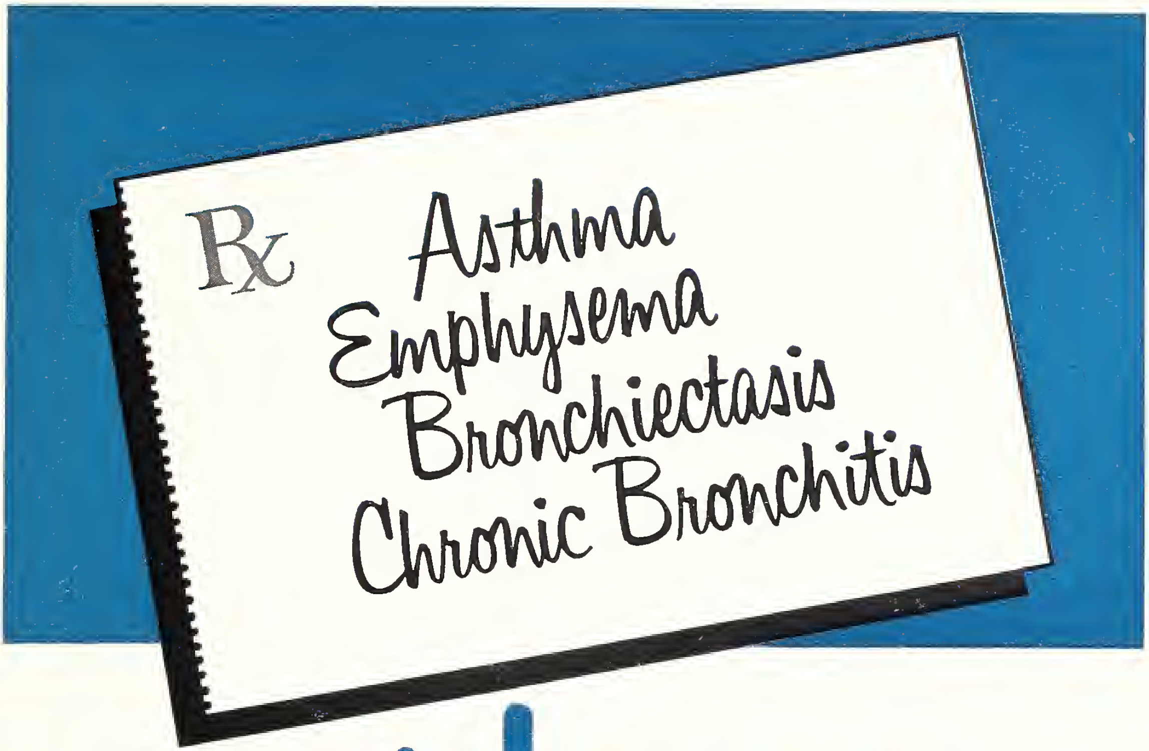

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April 4, 1965, St. John's Mercy Hospital Conference Rooms, Gymnasium

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6:00 p.m. Buffet Supper, Cafeteria.

8:00 p.m. Business Meeting, Missouri Association of Blood Banks.

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April 5, 1965

9:00 a.m. Invocation, Rev. Richard P. Ellerbrake, Assistant Administrator, Deaconess Hospital, St. Louis.

9:05 a.m. Addresses of Welcome, Thomas J. Cooper, M.D., Retiring President, Missouri Association of Blood Banks; Beverly Fiorella, MT(ASCP), President, Missouri Society of Medical Technologists.

9:10 a.m. Erythroblastosis fetalis, G. Lowther, M. D.

9:45 a.m. Indications and Techniques of Intrauterine Transfusions: Eugene F. Tucker, M.D., Director of Laboratories, St. Mary's Hospital; Associate Professor, Department of Pathology, St. Louis University School of Medicine, St. Louis.

10:10 a.m. Question and Answer Period.

10:30 a.m. Coffee Break. View Exhibits.

11:00 a.m. H and I Blood Group Systems, Virgil Bleisch, M.D., Pathologist, St. Elizabeth Hospital, Belleville, Illinois.

11:30 a.m. Question and Answer Period.

2:30 p.m. Appropriate Use of Blood Fractions in Hemorrhagic Disorders, Fedor Bachman, M.D., Department of Medicine, St. Louis City Hospital.

2:30 p.m. Agar Gel Hemoglobin Electrophoresis—A Rapid Technique Using Microscope Slides, Robert W. Brangle, M.D., Assistant Pathologist, Deaconess Hospital, St. Louis.

3:00 p.m. Coffee Break. View Exhibits.

3:30 p.m. Hemophilia, J. D. Bouhassin, M.D., Cardinal Glennon Hospital, St. Louis.

4:00 p.m. Question and Answer Period.

6:30 p.m. Social Hour.

7:30 p.m. MSMT-MSP Banquet, Colony Motor Hotel, Clayton.

April 6, 1965

9:00 a.m. A New Method of Data Processing, George E. Gantner, M.D., Director of Laboratories, Firmin Desloge Hospital; Associate Professor, Department of Pathology, St. Louis University School of Medicine, St. Louis.

9:45 a.m. Understanding Chromosome Analysis, Clarita L. Hampton, B.S., MT(ASCP), St. Mary's Hospital, Kansas City, Missouri.

10:00 a.m. Coffee Break. View Exhibits.

10:30 a.m. Diseases in Animals Transmitted to Man, Malcolm McGavern, Department of Pathology, Washington University, School of Medicine, St. Louis.

11:00 a.m. To be announced.

2:00 p.m. Immuno-Pregnancy Tests, Mary Schneidermeier, MT(ASCP), Department of Microbiology, St. Mary's Hospital, St. Louis.

2:15 p.m. PKU Determinations, Raymond Gray, Ph.D., Microbiologist, Clinical Laboratories, St. Louis.

2:45 p.m. Coffee Break. View Exhibits.

3:15 p.m. (Subject to be announced.) Department of Microbiology, Hyland Laboratories, Los Angeles, California.

April 7, 1965

9:00 a.m. Thin Layer Chromatography, L. E. Loveless, Ph.D., Biochemist, Clinical Laboratories, St. Louis.

9:30 a.m. T_3 Determinations, Thomas J. Cooper, M.D., Cooper Medical Laboratories, Clayton.

10:00 a.m. Coffee Break. View Exhibits.

10:30 a.m. Special Isotope Procedures, John Gantz, M.D., Director, Department of Nuclear Medicine, St. Mary's Hospital, St. Louis.

11:00 a.m. Seminar on Clinical Enzyme Determinations, Dan Trumbetta, General Diagnostics Division, Warner-Chilcott Laboratories, Morris Plains, New Jersey.

CLASSIFIED ADS

HOUSE AND OFFICE FOR SALE—Six room residence with adjoining three room office in northern part of St. Louis County, outside of city limits. Located here for 37 years. Retiring. For further information, contact Box 312, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

FOR RENT—Desirable well located office in Fulton, Missouri, a city of 11,000; Westminster and William Woods Colleges; Factories, Parks; swimming pools. Accredited eighty bed hospital, open staff. Retiring. Contact R. N. Crews, Fulton, Missouri.

WANTED—Associate in General Practice in a two-man Modern Clinic Building. Town of about 7,000 in Missouri Ozarks. Modern hospital available. Contact Rollin H. Smith, M.D., West Plains, Missouri.

FOR SALE—Complete office equipment, including 200 M.A. Picker X-Ray with motor driven table and fluoroscope. Will sacrifice. Sell all or part. Located in Southwest Missouri. Contact George Hobbs, M.D., 1601 Parkview, Rockford, Illinois.

PHYSICIAN seeks position as industrial physician or medical examiner for insurance company, preferably Kansas City or St. Louis area. Contact Box 313, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

WANTED—General Practitioner to associate in Group Practice. Modern office facilities and accredited hospital. Adequate guaranteed income to start and increases leading to full partnership. Contact Eugene B. Robichaux, M.D., Excelsior Springs, Mo.

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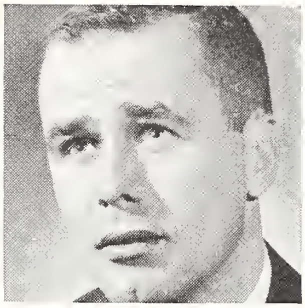

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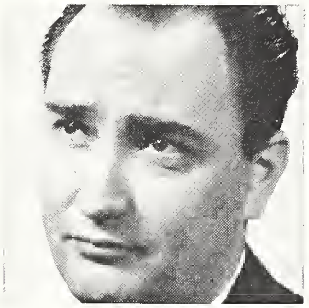

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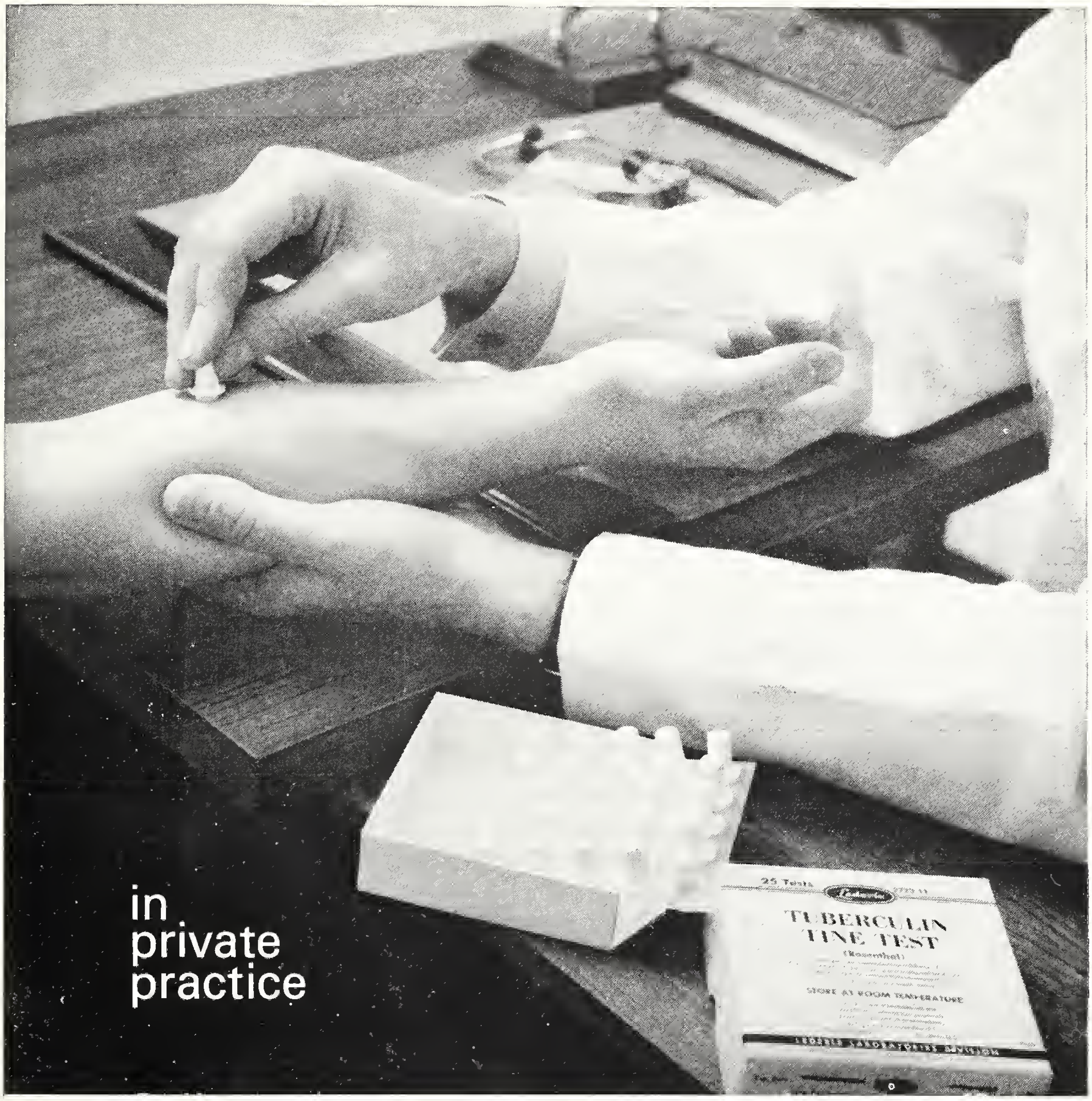
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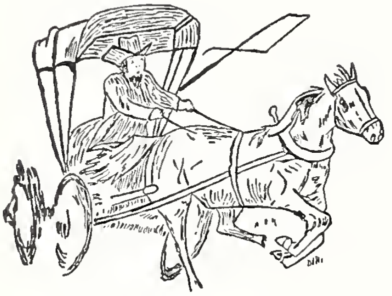

FORTY YEARS AGO

The appointment of Dr. James Stewart, St. Louis, as secretary of the state Board of Health will meet with the general approval of the medical profession. Those who know Dr. Stewart are aware that he possesses those qualities of organization, direction and supervision without which no one can successfully fill the important position.

The Supreme Court of Missouri has upheld the St. Louis ordinance which gives the city the right to sell in-pounded dogs, not claimed by their owners, to the reputable medical schools of the city for scientific purposes. The Humane Society of St. Louis had brought suit to restrain the city from enforcing the ordinance, but this restraining order was denied by the Circuit Court and the case was appealed.

The Missouri Building, the new structure situated in the heart of the medical Community of St. Louis at Grand Boulevard and Lucas houses the new headquarters of the State Medical Association. The building is rapidly filling up, a large number of physicians and dentists having already moved their offices to the new location.

TWENTY-FIVE YEARS AGO

Joplin, where the Missouri State Medical Association will hold its 1940 Annual Session as guest of the Jasper County Medical Society, was named for Rev. Harris G. Joplin, Methodist home missionary who settled in the vicinity in 1839. Jasper County has excellent hospitals, Freeman and St. John's Hospitals at Joplin, and McCune-Brooks Hospital at Carthage.

The fifth annual Leo Loeb Lecture under the lectureship established by the Mu Chapter of the Phi Beta Pi Medical Fraternity, Washington University School of Medicine, was delivered by Dr. Paul R. Cannon, Chicago, on March 8. Dr. Cannon's subject was "Some Aspects of Allergy." Dr. Albert H. Hamel, St. Louis, was honored at a reception at the home of his son, Mr. Ellis H. Hamel, Webster Groves, on March 10, in commemoration of the anniversary of his fiftieth year in the practice of medicine. Dr. Hamel was president of the Missouri State Medical Association in 1922.

The St. Joseph Clinical Society presented its ninth annual two day spring clinic on March 20 and 21 at the Hotel Robidoux. Officers of the society are: President, Dr. Charles Greenburg; first vice president, Dr. Frank X. Hartigan; secretary, Dr. E. E. Wadlow; treasurer, Dr. H. E. Peterson; clinical directors, Drs. T. L. Howden and James O'Donoghue; publicity secretary, Dr. Jacob Kulowski.

TEN YEARS AGO

Dr. Daniel L. Sexton assumed the office of President of the St. Louis Medical Society at the annual meeting on January 3. Dr. Louis H. Kohler, superintendent of St. Louis State Hospital, was named President-Elect for 1956. The following physicians were elected as officers of the St. Louis County Medical Society at the installation banquet, which was held on January 12: President, Dr. Louis F. Howe; vice president, Dr. James F. Dowd, and secretary, Dr. George Wulff.

The annual Spring Conference of the Missouri Health Council will be held at the Governor Hotel, Jefferson City, on April 29. Victor B. Buhler, M.D., President of Missouri State Medical Association, will be the physician representative on the panel to discuss "Urgent Health Needs in Missouri."

The single licensure bill for the practice of medicine and the healing arts in Missouri, has been a subject for discussion among medical men for some time. This bill makes it mandatory that every practitioner of the healing arts have the same examination before being licensed. There are roughly 5,000 M.D.'s and 1,500 Osteopaths practicing at this time.

Carroll P. Hungate, M.D., Kansas City, has been selected as a member of the Founders Group of the American Board of Aviation Medicine.

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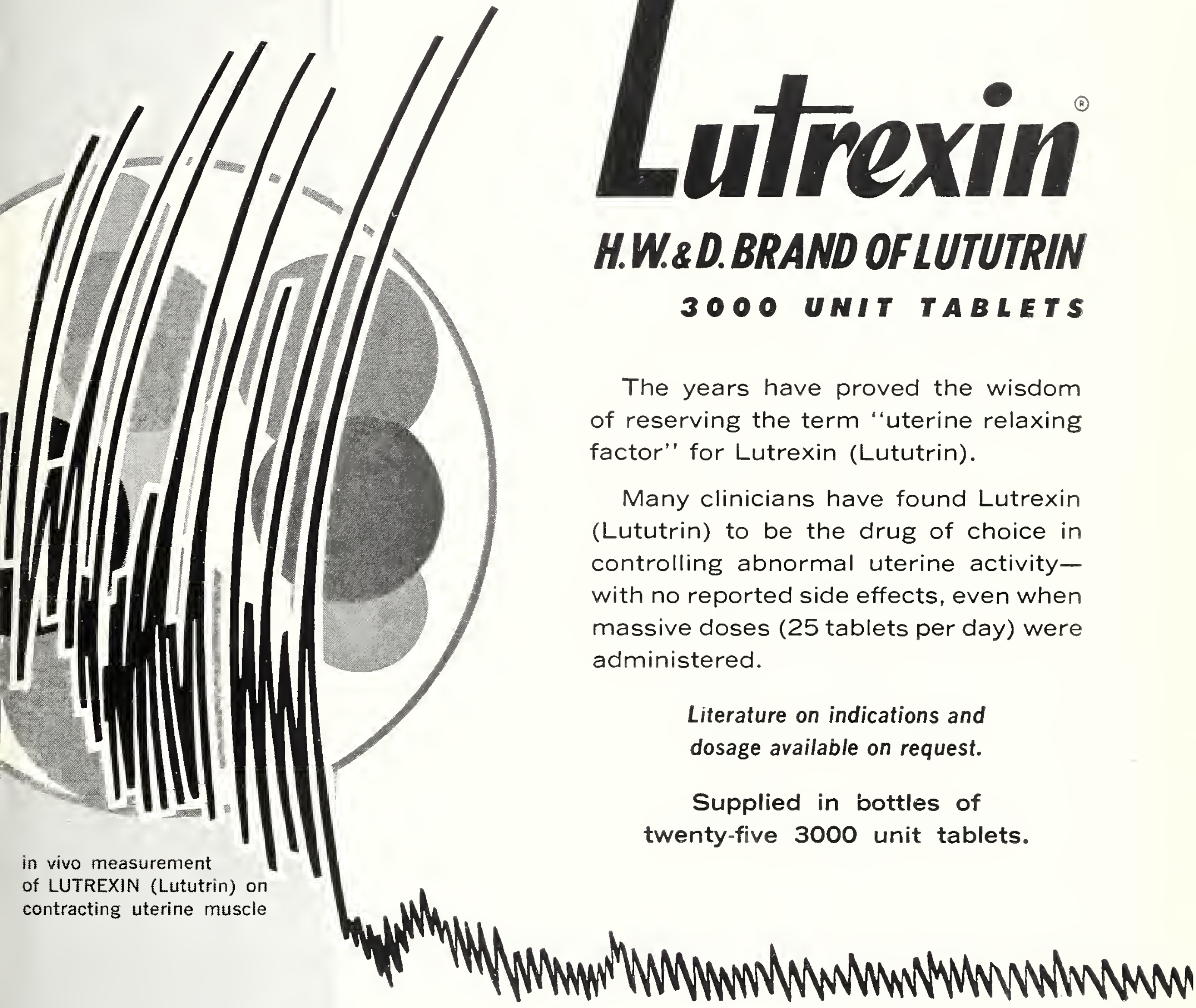

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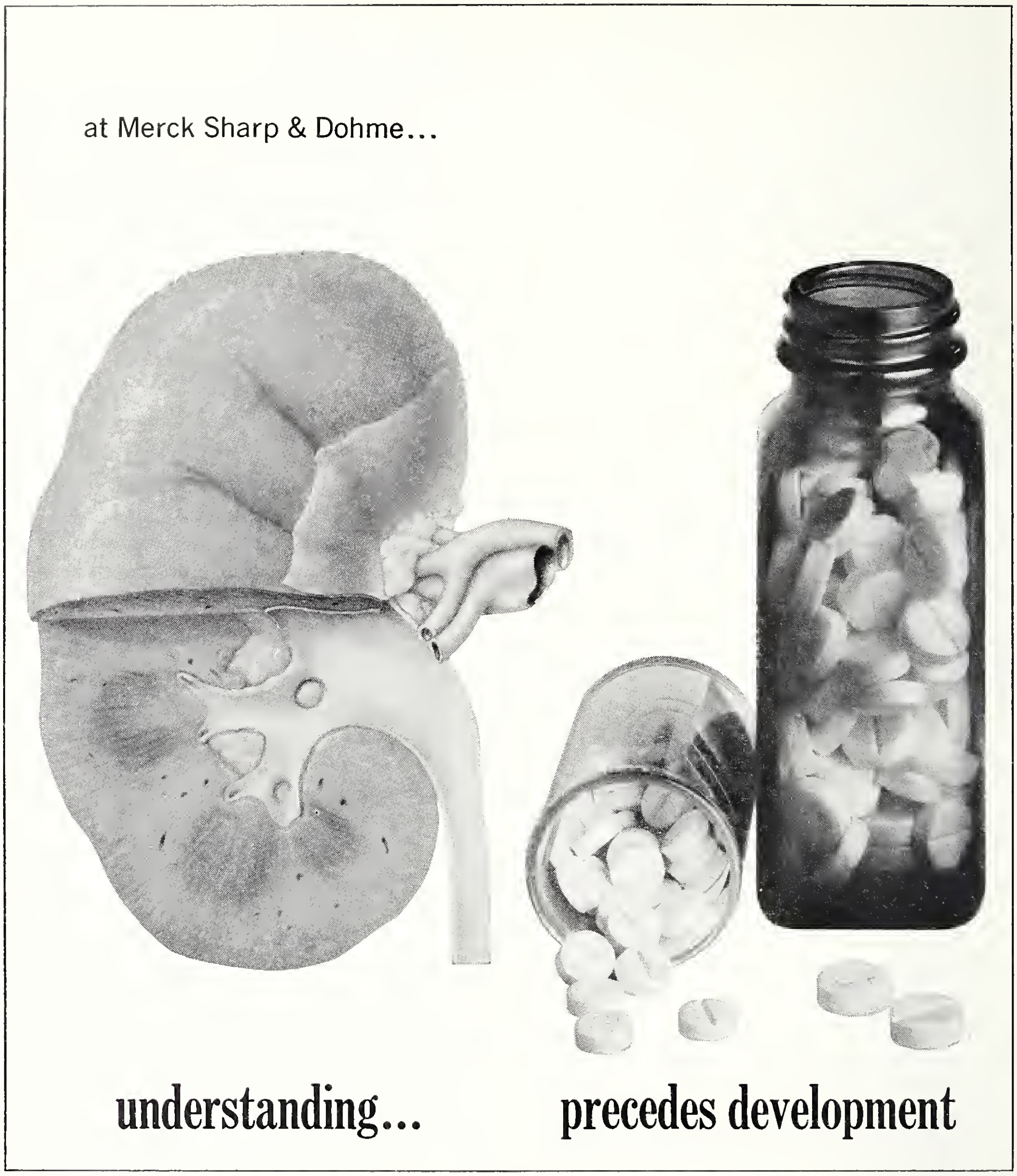

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The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

- Many problems connected with renal structure and function were still undefined or unsolved. The Renal Research Program would begin its basic research in some of these problem areas.
- From knowledge thus acquired might come clues to the development of new therapeutic agents of significant value to the physician.

For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

Along with other research teams at Merck Sharp & Dohme, the Renal Research Program continues to add new understanding of basic problems—understanding which will lead to important new therapeutic agents.

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*Heredia Diaz, J. et al.: Medicina (Mex.) 38:308, July 10, 1958.

Condition	No. of Patients	No. Responded to Signemycin
Abortion, infected	45	44
Adnexitis (parametritis)	66	61
Cervicitis	18	18
Endometritis	64	61
Mastitis and breast abscess	44	42
Puerperal sepsis	14	14
Salpingitis	39	34
Other ob-gyn infections	51	46
Totals	341	320 (93.8%)

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International Flavor for AMA Session

The 114th annual convention of the American Medical Association June 20-24 in New York City will have an international theme throughout the scientific programs.

"In keeping with the New York World's Fair, already drawing many thousands of foreign tourists to the city, the AMA has scheduled eminent foreign physicians to deliver lectures at the scientific meetings to be held during the convention," said J. Arnold Bargen, M.D., chairman of the AMA's Council on Postgraduate Programs. The Council directs planning of the scientific programs for the convention.

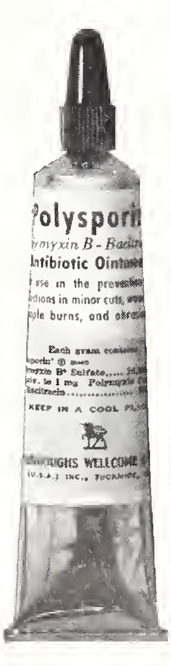
In addition to program participants, large delegations of physicians from many foreign nations will attend the convention and participate in the scientific sessions. Large groups from Japan, Mexico and many other nations already have indicated that they will attend.

"American physicians will have an opportunity at the New York convention to meet and mingle with other physicians from throughout the world, and to learn of current medical knowledge in other lands," said Dr. Bargen.

"We are proud of the fact that the United States now leads the world in medical science. Thousands of foreign doctors come to our shores every year for graduate study and training. More than 2,000 American physicians are serving in foreign lands as representatives for various governmental and private medical programs. Foreign physicians have much to learn from American medicine, and at the same time there is much that American doctors can learn from the many fine professional men in medical science in other lands," he said.

The New York World's Fair has been widely publicized throughout the United States and in the rest of the world. Many physicians, both from this nation and other lands, look to the June convention of the AMA as an opportunity to combine a visit to the World's Fair and intensive postgraduate study by means of the scientific lectures, films, color television and exhibits, Dr. Bargen said.

The six general scientific meetings of the convention will offer the latest research developments in adverse drug reactions; organ transplantation; hearing; non-narcotic drug addiction; metabolism in growth development and aging, and diagnostic cytology.



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*Hammerl, H.: Wien. Med. Wschr. 108:629, July 26, 1958.

Condition	No. of Patients	No. Responded to Signemycin
Abscess, pulmonary	17	16
Bronchiectasis	19	13
Bronchitis	286	267
Bronchopneumonia	192	179
Empyema	12	11
Pneumonia, lobar	150	146
Pneumonia, other febrile	160	150
Various infected pneumopathies	192	172
Totals	1,028	954 (92.8%)

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medical melange

Notes of interest from Here . . . . and There

The American Medical Association's Committee on Nursing has developed a series of guides for state and county medical societies interested in initiating or revising programs of nurse-liaison activities. According to Florence M. Alexander, Ph.D., committee secretary, the guides are designed to: assist new committees to organize, strengthen committees already established, and present suggestions for expansion of existing committees. Dr. Alexander said, "Close collaboration of physicians and nurses on matters concerned with the quality of patient care is an essential ingredient to the health care of the people."

Cissampareine and podophyllotoxin, both extracted from plants, have been shown to possess tumor-inhibiting activity by a group of researchers at the University of Wisconsin. Reports on the compounds appear in the April issue of the American Pharmaceutical Association's *Journal of Pharmaceutical Sciences* in two articles from the series "Tumor Inhibitors."

Dr. John D. Porterfield, III, Coordinator, Medical and Health Sciences, University of California, Berkeley, and former Deputy Surgeon General of the U. S. Public Health Service, has been named director of the Joint Commission on Accreditation of Hospitals. The announcement was made by Dr. Richard A. Kern, chairman of the Commission. Established in 1952 by doctors and hospitals to constantly evaluate hospital care standards throughout the nation by vigorous and voluntary methods of self discipline, the Commission for the past ten years has been directed by Dr. Kenneth B. Babcock whose resignation was announced in April, 1964.

Another scientist, well known in his field, has been added to the full-time staff of the Menorah Medical Center and the Danciger Institute for the Health Sciences in Kansas City. Dr. Jack Katz, assistant professor of Otolaryngology at Tulane University School of Medicine, will become Director of the Irvin M. Birenboim Audiology Clinic on August 1. His appointment to the post was announced by Dr. Oscar Pinsker, Chairman of the Department of Otolaryngology at Menorah Medical Center. A native of New York, Dr. Katz received his Ph.D. in Audiology from the University of Pittsburgh.

A Federal District Court has ruled that the patent on tetracycline owned by Chas. Pfizer & Co., Inc. is valid and fully enforceable. In the first case to reach trial involving the validity of Pfizer's tetracycline patent, the Court in Miami, Fla., found that Pfizer is entitled to obtain a permanent injunction against Barry-Martin Pharmaceuticals, Inc., a Miami drug distributor of generic tetracycline, prohibiting further infringement of the Pfizer patent, and to recover all its damages from the infringement.

Celestone Soluspan, a new and unique injectable form of betamethasone, has been introduced by the Schering Laboratories. The company claims that the product is the first corticosteroid injectable to provide both immediate and long-acting anti-inflammatory action in a single dose. It is a prescription product available through physicians only.

(Continued on page 354)

Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87]
In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded to Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

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medical melange (cont'd.)

Signs of precocious puberty regressed dramatically when small children afflicted with the syndrome received regular injections of a hormone drug. Onset of symptoms, including various manifestations, ranged from infancy to 7 years. The age span of children under treatment was 3 to 7 years. Each child was given regular injections of Depo-Provera (medroxyprogesterone acetate) for periods varying from 6 months to 2 years. "Without exception, the parents are well pleased with the results, and . . . not one patient has discontinued therapy despite the inconvenience of having to receive regular injections over long periods of time," the physicians reported in *American Journal of Diseases of Children.*

A new motion picture showing the operation of a psychiatric service in a general hospital has been released by the American Hospital Association. The film, titled "Psychiatric Services in General Hospitals," is presented by the AHA, the American Psychiatric Association and E. R. Squibb and Sons, in cooperation with the Hospital Research and Educational Trust. The 25-minute, 16 mm., color documentary is primarily intended for hospital trustees, administrators, medical staffs, nurses and other hospital personnel, but it will also be available to other community agencies on a loan basis.

Why arthritis symptoms often accompany certain intestinal diseases and why certain forms of arthritis exhibit gastrointestinal symptoms are mysteries which should be carefully studied, according to the latest issue of The Arthritis Foundation's *Bulletin on Rheumatic Diseases.* Writing in the publication, which goes to 68,000 physicians, Seattle Drs. Kenneth R. Wilske and John L. Decker suggest a closer look at relationships between intestinal and rheumatic disease to improve diagnosis and treatment and to seek a common cause for joint involvement in specific intestinal diseases.

Winstrol (stanazolol), a synthetic steroid, produces very satisfactory results in building up needed body tissue with a minimum of masculinizing action, according to results of studies of anabolic steroids published in *Clinical Medicine.* The other steroids discussed were norethandrolone, methandrostenolone and oxymetholone. In all four compounds the anabolic functions are significantly dissociated from their androgenic action, points out Dr. M. L. Tainter and co-workers at the Sterling-Winthrop Research Institute.

Four criteria that may make possible the X-ray diagnosis of emphysema are proposed in a paper in the January issue of *The American Review of Respiratory Diseases,* journal of the American Thoracic Society. A way to spot emphysema on X-ray films could lead to chest X-ray surveys of groups at possible risk, as has been done in screening for tuberculosis. This would be a simpler procedure than the lung function tests being tried in different localities at present.

A new one-shot vaccine which reportedly gives youngsters long-lasting protection against common measles with few or no reactions, has been announced by Pitman-Moore, division of The Dow Chemical Company. The vaccine was licensed by the United States Public Health Service and shipments to druggists and physicians will start soon. The new vaccine, called Lirugen, was developed by Dr. Anton J. Schwarz, head of Pitman-Moore's Virus Research. According to published scientific literature, Lirugen is the first live measles vaccine that precludes a simultaneous shot of gamma globulin.

Component Societies in Affiliation With the Missouri State Medical Association

County	District	President	Address	Secretary	Address
Andrew	1	V. R. Wilson	Rosendale	Warren C. Baker	Savannah
Audrain	5	Ernest S. Gantt	Mexico	Thomas L. Dwyer	Mexico
Barton-Dade	8	Herbert M. Arnold	Lamar	Alvin R. Cain	Lamar
Benton	6			James A. Logan	Warsaw
Boone	5	John H. Walters	Columbia	E. J. Schewe	Columbia
Buchanan	1	Herbert C. Senne	St. Joseph	Berwyn H. Moen	St. Joseph
Butler-Wayne-Ripley	10	Fred Caldwell	Poplar Bluff	Ernest M. Tapp	Poplar Bluff
Callaway	5	William J. Cremer	Fulton	Katherine Brown	Fulton
Cape Girardeau	10	L. R. Seabaugh	Cape Girardeau	Edwin K. Burford, Jr.	Cape Girardeau
Carter-Shannon	9	H. D. Rollins	Winona		
Chariton-Macon-Monroe-Randolph	2	L. E. Huber	Moberly	Robert Hasson	Moberly
Clay	1	W. L. Sportsman	N. Kansas City	Marvin L. Roberts	Kansas City
Clinton	1	W. B. Spaulding	Plattsburg	J. P. Mabrey	Plattsburg
Cole	5	James T. Leslie	Jefferson City	Jerome Schmidt	Jefferson City
Cooper	5	G. L. Chamberlain	Boonville	D. Hata	Boonville
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Dunklin	10	Paul Baldwin	Kennett	Quinton Tarver	Kennett
Franklin-Gasconade-Warren	4	Samuel C. Bonney	Washington	Carvel T. Shaw	Hermann
Grand River Medical Society (Caldwell-Livingston-Carroll-Grundy-Daviess-Harrison-Linn-Mercer-DeKalb)	1	George Mandler	Chillicothe	Albert D. Cross	Trenton
Greene	8	Wm. H. Snead	Springfield	Ernest Lorenc	Springfield
Henry	6	J. O. Smith	Clinton	R. S. Hollingsworth	Clinton
Howard	5	William J. Shaw	Fayette	M. P. Leech	Fayette
Jackson	7	Frederick J. McCoy	Kansas City	James W. Fowler	Kansas City
Jasper	8	John D. Maddox	Joplin	D. O. Allen	Joplin
Jefferson	4	F. L. Kozal	Crystal City	J. L. Mayfield	Crystal City
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Lafayette-Ray	6	Wilbur E. Fulkerson	Higginsville	William LaHue	Lexington
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Lincoln-St. Charles	4	Paul T. Berry	Troy	Gerald A. Yaeger	St. Charles
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Ozarks Medical Society (Barry-Lawrence-Stone-Christian-Taney-Newton-McDonald)	8	Wm. P. Hamilton	Aurora	Paul B. Anderson	Neosho
Pemiscot	10	Allen Gubin	Caruthersville	James W. Bernard	Caruthersville
Perry-Ste. Genevieve	10	Oscar Carron	Perryville	Joseph Lutkewitte	Ste. Genevieve
Pettis	6	A. R. Maddox	Sedalia	Robert L. Glass	Sedalia
Pike	2	Edward K. Jackson	Clarksville	L. G. Stuerman	Louisiana
Platte	1	H. Graham Parker	Platte City	H. C. Thurman	Parkville
St. Louis City	3	Walter Gunn	St. Louis	Richard V. Bradley	St. Louis
St. Louis County	4	James C. Sisk	Clayton	Melvin M. Schwartz	St. Louis
Saline	6	Robert W. Blalock	Marshall	John R. Lawrence	Marshall
Semo County Medical Society (Stoddard-New Madrid-Mississippi-Scott)	10	John Dernoncourt	Charleston	Thelma C. Buckthorpe	Sikeston
South Central Counties Medical Society (Howell-Oregon-Texas-Wright-Douglas-Ozark)	9	Amos L. Coffee	Willow Springs	Rollin H. Smith	West Plains
Webster	8	C. R. Macdonnell	Marshfield	Robert J. Bareis	Marshfield
West Central Missouri Medical Society (Bates-Cass-Cedar-St. Clair-Vernon)	6	W. S. Love	Nevada	Roy W. Pearse, Jr.	Nevada

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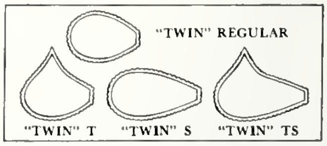

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Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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DANIEL L. DOLAN, M.D., *Springfield*

Rabies Prevention: A Practical Guide

A review of the current accepted immunotherapy for the prevention of rabies. The author outlines the criteria for instituting therapy, degree of therapy and diagnostic techniques which may be useful to the physician who is confronted with a patient suffering from an animal bite. Doctor Dolan is associated with the Glenn-Turner-Webb Medical Clinic in Springfield, in the practice of internal medicine and diagnosis.

Rabies remains a 100 per cent fatal disease. The public is well aware of this fact. The practitioner is frequently asked for advice concerning post-exposure treatment following an animal bite. Which course to follow can often be an agonizing judgment. The purpose of this paper is to present general precedents by which such judgments can be made intelligently.

Incidence

Fortunately, rabies is a rare disease in the human. The incidence of human cases of rabies reported in the United States since World War II has been quoted as between three and 40 cases out of an estimated two million animal bites per year. In the year 1958, 947 human deaths due to rabies were reported by 65 countries and territories queried by the World Health Organization.[1] Vaccination reactions are more frequent than with the other common immunizations, and for this reason it has never been deemed wise to routinely immunize the population.

Prophylactic Vaccination

Veterinarians, laboratory workers, cave explorers and other individuals with a high exposure rate find prophylactic vaccination to be an important means of protection. Active immunization is usually obtained by either the phenol-killed duck embryo vaccine or an attenuated high embryo passage Flury strain vaccine. The dosage of the former is given as 1 cc. (0.2 cc. intradermally and 0.8 cc. subcutaneously on opposite arms) on days one, seven, 14, 55 and 200. Antibody titers are then tested for levels greater than 1:32 after the four injections. If satisfactory titers are obtained, booster doses of 1 cc. are given every one to two years. If exposure occurs within three months of vaccination, a single booster dose is given. If the interval is between three and 12 months, two doses 24 hours apart and a third dose one week later are given. If the interval is longer than one year, re-vaccination is accomplished.[1] High embryo passage Flury attenuated live virus vaccine appears to be promising. The addition of an aluminum hydroxide adjuvant apparently attains approximately a 95% satisfactory antibody titer response. The schedule utilizes four intramuscular 1 cc. injections at weekly intervals with a 1 cc. booster at seven to 11 weeks.[2] Booster and exposure schedules are comparable.

Exposure

An accurate history of the bite is perhaps the single most important piece of information in deciding on post-exposure treatment. All too often this history is not available, either through a young child having been bitten or the biting animal unseen or lost. In these circumstances the guide listed in Table 1 must be relied on, and full post-exposure treatment given. Where a good history is obtainable, however, the circumstances can be weighed and the necessity for treatment sometimes eliminated. A brief review of the known natural history of rabies is, therefore, pertinent.

The virus is neurotropic with an affinity for warm blooded animals. The famous exception to this is the bat* which is felt to be one of the main natural reservoirs of the disease at the present time.[3, 4] Bird bites, reptile bites, etc., are not to be considered threats. Two cases of rabies have been reported following exposure to bat infested caves in the absence of any known bite.[1, 5] It has been postulated that the virus might be inoculated through inhaling air heavily contaminated by bat guano and dust containing sufficient innoculum of the virus.[6] With this exception, however, infection occurs by inoculation of a puncture wound with saliva from a rabid animal. The virus is then thought to migrate up the efferent nerves to the central nervous system and from there via afferent nerves to the salivary glands, at which point the animal becomes contagious.[1] Once the virus has gained entry to the central nervous system, death is felt to occur almost inevitably within 14 days. The bat is an exception. Because of the lower metabolic rate in the bat, this mammal is thought to tolerate the rabies virus for a much longer period, perhaps more than 100 days.[7]

All bat bites should be given full post-exposure treatment.[8] All efforts should be made to capture the biting animal. A captured animal should be submitted immediately for veterinary inspection. If the animal is dead, tissue should be submitted for fluorescent antibody determination.[9] Salivary glands in bats should also be examined or inoculated into rats.[10] If the biting animal is not a bat and does not die in two weeks, it was incapable of transmitting rabies with its initial bite. For this reason extremely young animals are very unlikely to be infectious. The incubation period of rabies from time of bite to neurological illness varies from two weeks to one year and is largely dependent upon the proximity of the bite from the central nervous system.[1]

An unprovoked bite or irrational behavior on the part of the biting animal should, of course, be viewed with alarm. Nighttime predators seen in the daytime should be viewed with suspicion. If the animal initially looks sick or there is suspicion of illness in the animal, full post-exposure therapy is usually begun. If the animal then regains its health, the treatment is stopped in five days.[11] Treatment with antiserum should not be delayed or temporized pending observation of the animal.

The location and severity of the bite is used as a rough guide for incubation period and size of inoculum respectively. Severe head and neck bites would have an urgency and severity probably not reflected by a small impalement of an extremity. Nonetheless, if a bite has broken the skin, the possibility for inoculation is present.[1]

Meaningful statisties as to the likelihood of developing rabies after exposure to a known rabid bite are difficult to find. In 1953 a rabid wolf in Iran bit 32 persons. Only six received treatment and this treatment would be considered inadequate by present day standards. Fifteen died of rabies. In this situation 47% contracted the disease, although the sample is admittedly small.[12]

Post-Exposure Treatment

Since the days of Pasteur, active immunization after a questionable exposure has been the hallmark of therapy. From Pasteur's original live virus vaccine, the Semple phenol-killed virus which was grown in rabbit neural tissue evolved. It proved to be an excellent antigen, but was fraught with many neuroparalytic reactions characterized by demyelinization presenting clinically as transverse myelitis (frequent recovery) or encephalitis (50% mortality).[13] The incidence of neuroparalytic reactions with this vaccine was estimated at one in 1 to 4,000 patients treated.[14]

Since it was felt the neural tissue acted as an adverse antigenic stimulant, other culture media were sought. The use of chicken and duck embryos for the purpose has now found standard use. The duck embryo phenol-killed vaccine is generally thought to result in neuroparalytic reactions in one in 10 to 15,000 immunizations.[12] Its anti-rabies antigenicity is felt to be acceptably close enough to the neural tissue cultured vaccine to make it the vaccine of choice in current use.

The Pasteur Institute of Iran in Teheran was selected by the World Health Organization in 1950 to organize a trial for demonstrating the value of anti-rabies serum associated with phenolized vaccine treatment. This was done be-

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* Although during periods of activity the body temperature of the bat may approach that of warm blooded animals, during hibernation and rest, it is generally quite low. Hence they are usually considered "cold blooded."

TABLE 1

GUIDE FOR SPECIFIC POSTEXPOSURE TREATMENT* † [13]

Nature of Exposure	*Biting Animal‡*		*Recommended Treatment (In Addition to Local Treatment)*
	AT TIME OF EXPOSURE	DURING OBSERVATION PERIOD OF 10 DAYS	
I. No lesion; indirect contact	Rabid	—	None
II. Licks			
(1) Unabraded skin	Rabid	—	None
(2) Abraded skin, scratches and unabraded or abraded mucosa	(a) Healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine at first signs of rabies in biting animal
	(b) Signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on fifth day after exposure
	(c) Rabid, escaped, killed or unknown	—	Start vaccine immediately
III. Bites:			
(1) Mild exposure	(a) Healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine at first signs of rabies in biting animal
	(b) Signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on fifth day after exposure
	(c) Rabid, escaped, killed or unknown	—	Start vaccine immediately
	(d) Wild (wolf, jackal, fox, bat, etc.)	—	Serum immediately, followed by a course of vaccine‡
(2) Severe exposure (multiple, or face, head, finger or neck bites)	(a) Healthy	Clinical signs of rabies or proven rabid (laboratory)	Serum immediately; start vaccine at first sign of rabies in biting animal
	(b) Signs suggestive of rabies	Healthy	Serum immediately; followed by vaccine; vaccine may be stopped if animal is normal on fifth day after exposure
	(c) Rabid, escaped, killed or unknown	—	Serum immediately; followed by vaccine§
	(d) Wild (wolf, jackal, fox, bat, etc.)	—	Serum immediately; followed by vaccine§

---

* From World Health Organization: Technical Report Series. #201, Expert Committee on Rabies. 4th Report, 1960.[11]

† The general principles on which this guide is based are these: if the exposure is mild, a course of vaccine following the recommended local treatment is sufficient, whereas following severe exposure, and in all cases of unprovoked wild animal bites, antirabies serum together with vaccine should be employed.

‡ This schedule applies equally whether or not the biting animal has been previously vaccinated.

§ Course of vaccine to be followed by supplemental doses of vaccine of nonnervous tissue, if possible, 10 and 20 days after the last usual dose.

cause their statistics indicated that the mortality rate from rabies after severe head and neck exposure employing vaccination approached 40%, whereas wounds on the trunk or extremities was usually something under 10%.[12] In 1954, 29 people were bitten by the same rabid wolf, 18 of them experiencing severe head and neck wounds. All arrived in Teheran within 36 hours of exposure. The head and neck bites were separated into two treatment groups. Five subjects received vaccine only. Three of these died of rabies. The other 13 subjects were treated with an injection of anti-rabies serum (one or two injections) and then vaccinated in the same manner. Of these, only one contracted rabies.[12] This was the first human correlation of work done earlier by Koprowski indicating that the early use of passive immunization (within 24 to 72 hours) was better protection than active immunization used alone.[15] It was subsequently found, however, that initial usage of anti-serum (passive) followed by vaccination (active) resulted in a suppression of antibody formation by the host. One initial dose of serum reduced but did not completely suppress active antibody response to 14 daily doses of vaccine. A second dose of serum, however, given on the fifth day of treatment suppressed the entire vaccination antibody response. Since passive antibodies do not long remain and the incubation period of rabies may extend to a year, the use of anti-serum alone could not be logical. A booster dose of vaccine given at day-28 and day-58 was found to produce an amnestic response with satisfactory antibody levels even when one initial dose of anti-serum was employed.[12] This is the schedule currently recommended by the World Health Organization for a known or suspected rabid exposure. The decision when to use this regimen or any part of it rests on the circumstances outlined in Table 1.

Therapy consists of local wound care and use of anti-serum initially, followed by vaccination.

Local Wound Care: Cleansing and debridement are important. The area is scrubbed thoroughly with hexachlorophene soap and irrigated with 50% ethyl alcohol or 1% benzalkonium chloride. Necrotic tissue is thoroughly debrided.[13] Cauterization has been abandoned because of disfigurement. Tetanus immunization should be given according to standard procedures.[1] The patient is then skin tested against the anti-toxin exactly as for tetanus anti-toxin. If there is no reaction, 5 cc. of anti-toxin is injected subcutaneously around the bite where this is possible. This amount is then subtracted from the total calculated intramuscular dose given immediately afterward. In the event that the patient is skin test reactive to the anti-serum and the indications for anti-serum are present as outlined in Table 1, the anti-serum is used anyway with antihistamines. If the following reaction is uncontrollable with the latter, rapid acting corticosteroids are utilized for as short a period as possible since their use will suppress the vaccination phase of the post-exposure treatment.[1] Their use probably does not interfere significantly with the passive immunization just given.

Anti-Serum: The anti-serum is next given in a dosage of 0.5 milliliters (40 International units) per kilogram of body weight intramuscularly.[12] In severe bites of the head and neck this dose may be doubled. It should be given preferably within 24 hours of exposure, and is probably of little benefit after 72 hours following exposure but is generally given anyway if this period of time has been exceeded. Under these circumstances the dose should be doubled or tripled.[1]

Vaccination: The duck embryo vaccine is next begun two to four days after institution of serum therapy. A daily injection is given subcutaneously for fourteen days. The injection site chosen is usually the abdomen or the back because of the rich lymphatic supply of the area and multiple drainage routes accessible, diminishing the incidence of regional lymphadenitis and lymphangitis. Injections are alternated to either side of the abdomen or back. Each injection is marked with a dab of merthiolate so that a second injection will not be repeated in the same area. Excessive discomfort or mild temperature elevations are usually treated with antihistamines and salicylates. Unless a reaction is alarming, corticosteroids should not be employed here because of the likelihood of antibody suppression. For severe head and neck bites the dosage recommended is 1 cc. twice daily for the first seven days, followed by 1 cc. daily for the second seven days. All other bites receive 1 cc. daily for the first 14 days. A 1 cc. booster injection is given in the same manner on day-28 and a final similar booster approximately day-58.[1]

ANIMAL CONTROL

Wild animals cannot be controlled short of species extermination which has not been practical. Sick or suspicious animals if captured should be penned and not killed if this is at all possible, particularly if there is a bite exposure. If they are killed prematurely, an autopsy of the brain may fail to show Negri bodies in the presence of active rabies. Fluorescent antibody examination here is imperative. The same holds true for domestic animals. In the domestic animal population, however, prophylactic vaccination finds its greatest use and is required by law in most states for pets and farm animals. The usual vaccine employed is the low embryo passage Flury strain virus which is a live chicken embryo attenuated vaccine. 1 cc. of this every two years effectively immunizes most animals. The optimum time of immunization is determined by the animal species.[12] Elimination of stray dogs has been recommended. Unvaccinated pets and domestic animals bitten by a known rabid animal should be immediately destroyed. If the owner is unwilling to destroy them, they should be kept in strict isolation for six months and post-exposure vaccination administered.[12] In a recently dead suspected animal where Negri bodies were not found in the brain substance, neural tissue should be tested by the fluorescent antibody technique where available. This technique shows promise in the future of being one of the most rapid and reliable diagnostic aids for rabies detection.[9]

SUMMARY

A review of the current pre and post-exposure immunotherapy for the prevention of rabies has been presented. Criteria for instituting therapy and the degree of therapy has been outlined. Current views on animal immunization and control are presented along with current diagnostic techniques designed to enable a physician confronted with an animal bite to make a decision concerning the best course of management for his patient.

Acknowledgment: Appreciation is expressed to Dr. David Rogers, Professor of Medicine, Vanderbilt University, for his helpful suggestions and comments on the preparation of this paper.

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In my opinion the predicted reduction in "public relations" drugs (those which the pharmaceutical companies kept in clinical investigation without any hope of commercial success) has indeed occurred. Also those interesting drugs that produce important pharmacological changes but have no known therapeutic use—in other words, "Drugs in Search of a Disease"—are fewer in number and more highly restricted in that fewer investigators are privileged to search for therapeutic uses. But the greatest impact is always the change in one's own research program produced by new regulations. What were these? The impact has been tremendous and has driven us to drink and chain-smoking since the use of alcoholic beverages and nicotine in clinical research have not, *as yet*, been covered by regulations.—Carl C. Pfeiffer, Ph.D., M.D., in *Journal of New Drugs*, 4:6, (Nov.-Dec.) 1964.

NICOLAI DE GUBAREFF, M.S. *and*
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Iodized Catgut and Its Possible Application

In the Control of Tumor Implantation Following Cancer Operations

In 1897 Jacobi[1] recommended iodine as a disinfectant for raw catgut, but little attention was paid to his work, and it was only in 1902 that the Danish bacteriologist, M. Claudius,[2] reintroduced the aqueous solution of iodine for sterilization of surgical sutures. Today, iodine solution still remains the only chemical known to be effective in disinfecting raw catgut.

As Dr. F. C. Kelly[3] of the Royal Society of Medicine said: "In the future, some iodine merits that enjoy contemporary favor will mainly appear ephemeral, while new merits, as yet hidden from us, will assuredly have declared themselves." One such "new merit" was recently described as a potential help in the prevention of dissemination of viable malignant cells during cancer operations. The recurrence of malignant growth resulting from mechanical dislodgement of viable cancer cells followed by their implantation in the area of the operative field, and especially along the suture line, is of great concern to the surgeon. A detailed account can be found in the excellent monograph by W. Cole *et al.*[4]

Attempts are being made with differing degrees of success to inhibit the growth of dislodged viable cells by using modified surgical techniques, irrigating solutions in conjunction with surgery, isolation perfusion, chemically-treated suture material, etc. One of the most critical aspects of this problem is the alarming frequency of recurrence of cancer at the suture line. According to Haverback,[5] 77.5% of local recurrences are found at the suture line.

One of the latest attempts to prevent recurrence of cancer growth at the site of the passage of the suture was described in two recent publications.[6, 7] The authors[6] performed several exploratory experiments in C_3H mice to determine whether iodized catgut would prevent "studding" of rhabdomyosarcoma by sutures carrying viable cells (Table 1). In a later experiment (unpublished data) the authors applied the same technique using the C_3H mouse and the lymphosarcoma tumor (Table 2). Both tumors are known to be highly malignant cancers.

In both series of tests the experimental procedure was essentially the same as described by Haverback and Smith.[5] The tumors were forced through a cytosieve, then diluted to a 1:20 dilution by weight with saline. Equal lengths of suture were contained in the suspension of malignant cells, passed through a calibrating loop, 1 mm in diameter, and then pulled through the calf of the mouse. The last 3 to 5 mm of the suture were left in the calf.

Two types of sutures were used in those tests: (1) Noniodized, nonboilable, plain type A-00 surgical gut and (2) Iodized, nonboilable, plain type A-00 surgical gut.

The onset of tumor growth in the animals implanted with the help of iodized suture was, on the average, 15 days behind the onset of tumor growth in the control group.

TABLE 1

Survival Time of Tumor-bearing Mice and Tumor "Takes" of Mice Implanted with Rhabdomyosarcoma

	Noniodized Suture—100 Mice		*Iodized Suture—118 Mice*	
	SURVIVAL TIME IN DAYS	% OF TAKES	SURVIVAL TIME IN DAYS	% OF TAKES
Minimum	35	—	45	—
Maximum	64	—	95	—
Average	45.2	100%	68.7	32.6%

The appearance of tumors at the site of passage of the surgical gut was considerably delayed in the case of the iodized gut: the first tumor in this group of animals appearing 12 days later than in the control animals. In both experiments the mean survival time of the tumor-bearing mice was greater in the cases where iodized suture was used than in the case of the mice treated with noniodized cutgut.

In 1963 Cohn and associates[7] conducted a series of experiments using the Brown-Pearce tumor for contamination of the site of intestinal anastomosis in rabbits. The Brown-Pearce tumor is a comparatively fast-growing, transplantable tumor and is one of the few which will grow in the peritoneal cavity as well as in the lumen of the intestine.

In his experiments Cohn compared the N4-0 chromic catgut to the N4-0 iodized catgut in experimental colon anastomosis in rabbits to determine if the use of iodized catgut would significantly reduce the number of recurrences at the suture site following the contamination of the surgical area with a suspension of Brown-Pearce tumor cells. The results were quite encouraging and showed tumors in 21 anastomoses of the 34 animals (61.76%) when chromic catgut was used compared to 5 of the 34 animals (14.70%) in which iodized catgut was used—a reduction of 47.06%.

The alarming number of recurrences of tumors at the suture line requires special attention of the surgeon as well as of the researcher. And, although extrapolation of results obtained from animal experimentation to the human subject is always a hazardous enterprise, the data obtained from the experiments in mice and rabbits discussed here justify the recommendation of the use of iodized catgut in certain surgical conditions, especially where the per cent of recurrences along the suture line has been found to be high.

At present, two leading Departments of Surgery, the Department of Surgery of Washington University School of Medicine in St. Louis and of the University of Illinois at the Medical Center in Chicago, have adopted the use of iodized catgut in their cancer patients as adjunct to other precautionary measures.

(Continued on page 378)

An interesting paper whose title is self-explanatory. The authors report on a series of experiments which indicate that iodized catgut may be of value in human surgery by decreasing recurrences of post-surgical cancer. Doctor Suntzeff is Research Associate and Professor Emeritus in Cancer Research at Washington University School of Medicine. Mr. Gubareff is Senior Research Scientist, Scientific Associates, Inc. The study was supported by a grant from the Lukens C. DeWitt Suture Mfg. Co. of St. Louis.

TABLE 2

SURVIVAL TIME OF TUMOR-BEARING MICE AND TUMOR "TAKES" OF MICE IMPLANTED WITH LYMPHOSARCOMA (UNPUBLISHED DATA)

	Noniodized Suture—100 Mice		*Iodized Suture—100 Mice*	
	SURVIVAL TIME IN DAYS	% OF TAKES	SURVIVAL TIME IN DAYS	% OF TAKES
Minimum	35	—	46	—
Maximum	63	—	67	—
Average	44.67	61%	57.42	7%

The Thompson-Brumm-Knepper Clinic of St. Joseph, Missouri announces the sixteenth annual Dr. F. G. Thompson, Sr. Lectureship, to be given on Thursday evening, May 27, 1965 at 8:15 in the Clinic Building. The speaker, Dr. Stephen E. Reid, is Associate Professor of Surgery at Northwestern University Medical School and physician for varsity athletics at Northwestern University. His subject will be: "Radiotelemetry in the Study of Head Injuries in Football and other Associated Athletic Injuries." The profession is invited.

MARVIN G. PARKER, M.D. *and*
JOHN F. LOWNEY, M.D., *Columbia*

Acute Promyelocytic Leukemia

Case Reports

A review of the literature and presentation of three cases of acute promyelocytic leukemia, a hematologic entity which only recently has received full recognition in this country. The authors note that unless physicians are aware of the syndrome which the disease presents, the diagnosis may initially be overlooked. The three cases which the authors observed were characterized by increased numbers of promyelocytes in the bone marrow and/or peripheral blood and hypofibrinogenemia with hemorrhagic tendency. Doctor Parker is a third year resident in the Department of Medicine and Doctor Lowney is Head of the Division of Hematology at the University of Missouri Medical Center.

Acute leukemia has frequently been associated with an increased bleeding tendency which has usually been ascribed to thrombocytopenia. However, Risak in 1935, first suggested that fibrinogenopenia was the cause of hemorrhagic tendency in three cases of acute myelogenous leukemia.[1] Case reports were later published which described acute leukemia with bleeding tendency and low fibrinogen levels.[2-4] The fibrinogenopenia was ascribed to a circulating fibrinolysin. Rosenthal in 1955 described seven cases of acute "blast" leukemia with hypofibrinogenemia and increased promyelocytes in the bone marrow.[5] It was not until 1957, that Hillestad in Oslo described a syndrome of acute leukemia with severe bleeding tendency, low fibrinogen levels, and predominance of promyelocytes in the bone marrow.[6] This was followed by similar reports in the French literature.[7]

Promyelocytic leukemia was not universally accepted as a separate entity.[8] However, recent reports by Ghitis[9] and Rosenthal[10] have supported the separate classification of this disease.

The purpose of this paper is to report three cases of acute promyelocytic leukemia, a hematologic entity only recently given full recognition in this country. We wish to emphasize its basis for consideration as a separate entity and to add new information which heretofore has not been mentioned.

CASE REPORTS

Case No. 1: This patient was a 20-year-old white female who entered the University of Missouri Medical Center on October 10, 1959, with a chief complaint of bleeding gums, easy brusability, and hematuria of five days' duration. She had been in good health until five days prior to admission when she noted bleeding of the gums upon brushing her teeth. Easy and spontaneous brusing of the skin appeared at this time. Three days before admission hematuria began. Two weeks prior to admission she sprayed with a solution containing malathion and dieldrin in a closed room. She frequently used hair spray. There was no previous history or family history of bleeding.

On physical examination, the temperature was 100°, pulse 120, respirations 20, blood pressure 100/54. Examination of the skin revealed petechiae of the lower extremities. There was bleeding from the gums. The spleen and liver were not palpable and there was no significant lymphadenopathy.

Pertinent laboratory data are compiled in Table 1. In addition, the urine was bright red in appearance. The fibrin-index showed no clot after two minutes (control clot formed in five seconds) and factor V was 12.5% of normal. The bone marrow revealed a hypercellular marrow with approximately 79% of the cells being promyelocytes and megakaryocytes were decreased (Fig. 1).

The patient was treated with prednisone, 15 mgm. every 6 hours, phytonadione, 5 mgm. daily, and four units of fresh blood. Sixteen days after admission, a fresh hemorrhage was noted in the left optic fundus. On the 19th day of hospitalization, the patient complained of a severe headache in the right occipital region which extended down the right side of the neck. Shortly afterward she became comatose and died.

Autopsy findings: Gross findings were hemorrhage, acute intra-cerebral and subarachnoid, massive right frontal lobe, and focal, pons, and medulla. Sections

TABLE 1

	Case No. 1		Case No. 2		Case No. 3		
	10/10/59	10/26/57	2/11/63	3/1/63	9/13/63	9/16/63	9/19/63
Hb. (gm.%)	12.5	5	12.6	10.1		13.7	9.1
Hct. (%)	36	15	36	26		41	27
WBC/cu.mm.	3,250	15,000	2,100	186,000	3,000	24,000	48,000
Differential:							
Blasts (%)	0	10	2	1		0	0
Promyelocytes	0	45	58	97		70	86
Myelocytes	2	24	10	0		6	1
Metamyelocytes	5	2	4	2		3	1
PMN	56	10	11	0		7	6
Bone Marrow:							
Blasts (%)	11		6			2	
Promyelocytes	69		75			63.5	
Myelocytes	5		3			16.5	
Metamyelocytes	1		11			1.0	
Platelets/cu.mm.	80,000	50,000	78,000			34,000	143,000
ESR (mm./hr.)	15		9			20	
Prothrombin Time (sec.)	28.6	41.2	20			25	
Plasma Fibrinogen (mg.%)	50		23			123	

of cerebral cortex showed marked interstitial and subarachnoid hemorrhage, and sections through pons and medulla showed localized infiltrates of promyelocytes (Fig. 2). The spleen and liver were normal in size. There were moderately enlarged aortic, tracheo-bronchial, peritracheal and mesenteric lymph nodes.

Case No. 2: This 13-year-old white female was admitted to UMMC on February 11, 1963, with an 11 month history of acute myelogenous leukemia. The patient had always bruised easily. In March 1962, there was marked vaginal bleeding and the patient was hospitalized. WBC at that time was 2000/cu.mm. and platelets were decreased. The bone marrow was interpreted as acute myeloblastic leukemia. Treatment was instituted with 6-mercaptopurine, steroids, and estrogens. There was recurrence of vaginal bleeding and the patient was referred to UMMC. Further history at that time revealed that the patient and her sister had used hair

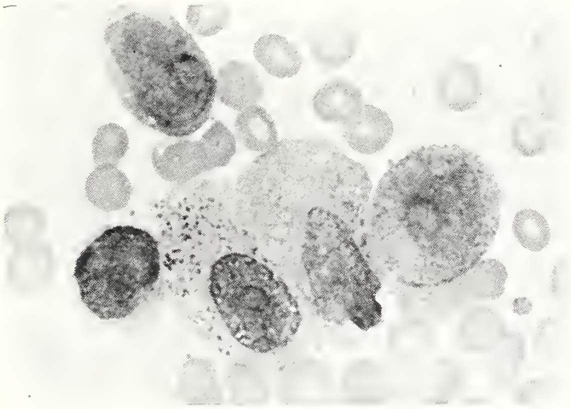

Fig. 1 Bone marrow from Case No. 1 showing promyelocytes.

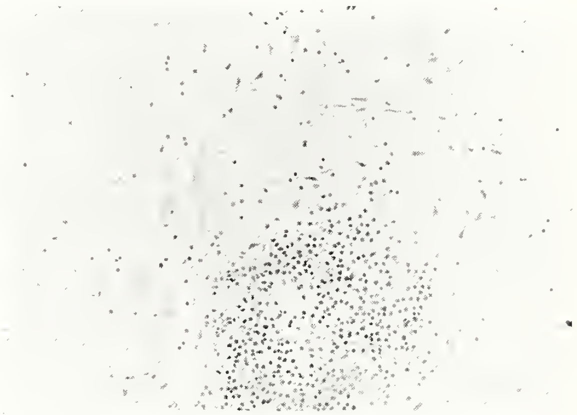

Fig. 2 Infiltration of promyelocytes in the pons in Case No. 1.

spray frequently for several years. There was also exposure to an insecticide containing malathion and dieldrin prior to the onset of the patient's illness. It was also said that a 15-year-old sister was seen by the family physician for sore throat, cough, and fatigue during the patient's illness, and at that time her total WBC was 3,200 and her platelet count was 50,000. The sister subsequently recovered completely.

Physical examination on admission revealed a young white female in no acute distress. Temperature was 99°, blood pressure 120/84, pulse 86, respirations 26 per minute. The patient presented a Cushingoid appearance. There were ecchymoses on the arms. No lymphadenopathy was found. The spleen was palpable 2 cm. below the left costal margin and the liver was palpable at the right costal margin.

Laboratory findings on admission are recorded in Table 1. In addition, the patient's blood clot was observed to liquify on standing.

The patient was fairly comfortable throughout most of her hospitalization. She did, however, have frequent epistaxis. Treatment consisted of steroids, 6-mercaptopurine, and estrogens. The WBC gradually increased, the platelet count remained below 50,000, and the hemoglobin fell. On March 1, 1963, the patient developed a severe frontal headache, became comatose and died.

Autopsy findings: The spleen weighed 310 gm. and the normal architecture was not grossly visible. The liver appeared normal. Examination of the brain revealed generalized subarachnoid hemorrhage in the midbrain.

Case No. 3: This 23-year-old white male was admitted to UMMC September 16, 1963, with a chief complaint of pain and discoloration of the left foot and leg of one day duration following chest pain of three days' duration. The patient had been well until four weeks prior to admission, when he began to experience frequent early morning hemoptysis of up to "one-third cup of bright red blood." He then experienced frequent nausea and occasional vomiting. Two weeks prior to admission he began to notice aching in his legs relieved by heat and rubbing. He also noticed malaise, chills, and occasional diaphoresis. Four days prior to admission he sustained a puncture wound of the left great toe. Three days prior to admission the patient became febrile, and he experienced sudden onset of pain in the right lower chest associated with dyspnea. He was hospitalized and given antibiotics. The following day he experienced pain in his left foot, and the foot and lower leg were cyanotic. The only other significant finding in the patient's history was that he had been exposed to an insecticide containing malathion and dieldrin.

Physical examination on admission revealed temperature 102.4°, pulse 120, respirations 30 per minute, blood pressure 160/100. The patient was well developed and well nourished, but appeared in moderate distress. Petechial hemorrhages were noted over the chest, neck, and lower abdomen. Breath sounds were decreased throughout the chest and there was dullness over the right lower lobe. Scattered inspiratory rales were heard throughout the chest. The abdomen was tender in both upper quadrants and the liver edge was palpable at the right costal margin. The spleen was not palpable and there was no lymphadenopathy. Femoral pulses were equal and full. Dorsalis pedis and posterior tibial pulses were palpable on the right but not on the left. The left leg was cool and cyanotic with sensory impairment.

Laboratory data are listed in Table 1. In addition, the patient's blood clot was observed for evidence of clot lysis. The clot appeared to liquify, but on close inspection, a small retracted clot was found. The fibrin-index was normal, but a very small clot formed compared to the control. The patient's serum did not lyse a normal clot.

The patient continued to be febrile with hemoptysis and cyanosis increased in the left lower extremity. The patient had progressive respiratory distress, became increasingly disoriented and died of respiratory failure on the third hospital day. Treatment during hospitalization consisted of steroids, antibiotics, and 6-mercaptopurine.

Autopsy findings: Each hemithorax contained 15 cc. of blood-tinged fluid. The right lung weighed 790 gm. and the left 500 gm. The right lower lobe was firm and dark blue in cut section. Small branches of the pulmonary artery in this area were filled with thrombi. There were thrombi in small branches of the left pulmonary artery. Numerous branches of the hepatic veins contained thrombi. The spleen weighed 650 gm. and the normal architecture was not visible. The brain was grossly and microscopically normal.

DISCUSSION

Acute promyelocytic leukemia is characterized by prominence of promyelocytes in the bone marrow, hypofibrinogenemia, and a rapid course with little or no response to therapy. Also as in Case No. 1, factor V activity may be significantly decreased.[10, 11]

Bernard has recently described in detail the cytology of the promyelocytes in this disease.[12] The percentage of promyelocytes in the marrows was over 60% in all of our patients. There was uniformly a myeloid hyperplasia. The promyelocytes seen were large cells with abundant cytoplasm (Fig. 1). The nucleus was large and irregularly shaped. Occasionally the nucleus was observed to be bilobed. Nucleoli were often present. The nuclear chromatin pattern was irregular with a few clumps but in general reticular in nature. Cytoplasmic granules were plentiful, varying in size and purple to bright red in color. Auer bodies were occasionally observed in the promyelocytes. Some promyelocytes contained round, regularly shaped eosinophilic granules. In Case No. 3, many of the granules had peculiar staining characteristics (Fig. 3). They either failed to stain at all or perhaps had been extruded from the cells leaving vacuoles in their places.

Hypofibrinogenemia is an important finding in this disease. All of our cases had a markedly decreased plasma fibrinogen level. Hemorrhage occurred in these patients in association with platelet counts in the range not usually associated with bleeding. It was therefore believed that the low plasma fibrinogen levels were largely responsible for the hemorrhagic diathesis in these cases. The etiology of the fibrinogen deficiency is not known. Hypofibrinogenemia has been associated with obstetrical problems, surgery, electro shock therapy, and carcinoma of the prostate as well as several other problems.[13] It has usually been associated with a circulating fibrinolysin. However, a circulating fibrinolysin has not been demonstrated in our cases nor in those reported by Rosenthal.[10] Thus, as proposed by Rosenthal, there may be an increased utilization of fibrinogen, decreased production or a combination of the two. Didisheim *et al.* found a marked decrease in the half-life of fibrinogen when injected into a patient with promyelocytic leukemia. No thrombi were found in this patient at autopsy.[11] It is interesting that the patient in Case No. 3 presented with thrombotic phenomena which could possibly have contributed to the hypofibrinogenemia. It might be speculated that in this patient the thromboses required increased fibrinogen utilization leading to the hypofibrinogenemia and hemorrhagic tendency. The cause of the marked thrombotic tendency in this patient remains unknown.

The unusual staining characteristics of the eosinophilic granules or "degranulation" of the cells in Case No. 3 is an interesting finding. This was not seen in our other cases nor has it been previously reported. In the light of the recent report that plasminogen, the precursor of plasmin or fibrinolysin, has been found localized in the eosinophilic granules of bone marrow cells,[14] one might wonder if the "degranulation" of the cells in Case No. 3 represented the mobilization of fibrinolysins in response to multiple thrombotic episodes. We do know, however, that fibrinolysins were not abundant enough in the patient's serum to lyse a normal clot.

Attention was drawn to promyelocytic invasion of the brain by Bernard.[7] Such infiltration of the brain stem was seen in Case No. 1. In this case the infiltrates of promyelocytes were localized in the substance of the midbrain without accompanying hemorrhage (Fig. 2). These infiltrates did not follow a vascular distribution as is usually the case in leukemia.

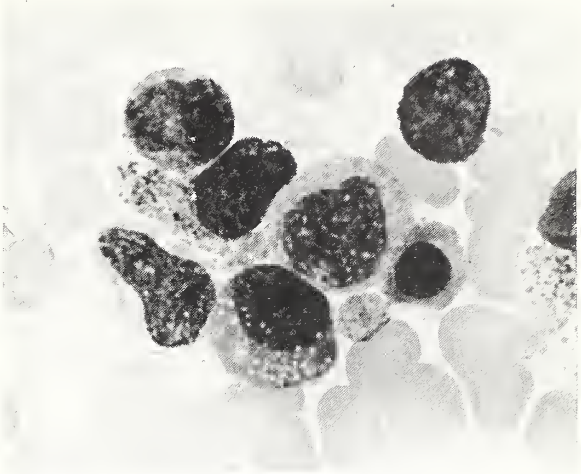

Fig. 3 Bone marrow from Case No. 3 showing "degranulation" of a promyelocyte.

There has been much speculation about the epidemiology and eitology of leukemia. Exposure to toxic agents has been incriminated frequently in the past as a factor in leukemia.[15-20] We noted that two of our cases of promyelocytic leukemia used hair sprays frequently. All three cases had been exposed recently to an insecticide containing malathion and dieldrin. However, since insecticides are in common use, this may be merely a coincidental finding.

We wish to emphasize that **unless one is aware of the syndrome which acute promyelocytic leukemia presents, the diagnosis may initially be overlooked.** The marrow may appear to be myeloid hyperplasia with promyelocytes predominating suggesting a type of maturation arrest.

When one is faced with a patient with hemorrhagic tendency and leukemia is suggested, the sedimentation rate may be the clue to the diagnosis of promyelocytic leukemia. In such cases the ESR is normal or low due to the hypofibrinogenemia. Of course the fibrin-index and the plasma fibrinogen levels are valuable aids in the diagnosis of this disease.

Therapy in promyelocytic leukemia is usually unsatisfactory. Rosenthal reported remission in one case on drug therapy.[10] Didisheim *et al.* reported remissions in two patients treated with 6-mercaptopurine and the return of their plasma fibrinogen level to normal during remission.[11] In a recently reported case of acute myelogenous leukemia with hemorrhagic tendency and hypofibrinogenemia, there was cessation of bleeding with the administration of fibrinogen.[21] Previous reports had indicated that fibrinogen therapy was of little help.[10]

SUMMARY

Three cases of acute promyelocytic leukemia have been presented. These were characterized by increased numbers of promyelocytes in the bone marrow and/or peripheral blood and hypofibrinogenemia with hemorrhagic tendency. The course was extremely rapid in two cases and of 12 months' duration in the other case.

In addition to previous descriptions of this disease, several interesting findings have been reported:

1) Multiple thrombotic episodes in one case

2) Peculiar staining characteristics of eosinophilic granules in one case

3) Exposure to an insecticide containing malathion and dieldrin in all three cases

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The first nationally developed criteria for evaluating hospital nursing services were released February 2, in Los Angeles at a National League for Nursing forum on hospital nursing service administration. The forum was the first of a series of six regional meetings aimed at helping nursing service administrators improve the care of hospitalized patients. Inez Haynes, general director of the League, said that the public's concern about the quality of hospital services led the League to develop these guidelines.

Iodized Catgut (Cont'd.)

SUMMARY

The dissemination of viable malignant cells during operations is of great concern to the surgeon. Recently in a series of experiments by the authors it was shown that iodized catgut considerably decreases the "studding" of highly malignant, transplantable Rhabdomyosarcoma and Lymphosarcoma cells in C_3H mice. Further experiments by Cohn *et al* using the Brown-Pearce tumor for contamination of the surgical area during colon anastomosis in rabbits showed similarly encouraging results. The results of these tests indicate that iodized catgut may be of considerable value in human surgery by decreasing recurrences of post-surgical cancer, especially along the suture line.

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Temporomandibular Pain

Case Reports

Pain in the temporomandibular joint is frequently responsible for bringing a patient to the medical or dental office. Inability to open the jaw, difficulty in eating, headaches, clicking noises and pain about the auricular area referred to the head, face, and neck comprise the symptoms of which the patient complains. The majority of these problems are seen in female patients, usually in the younger age group.

The following three cases were seen on the St. Louis University Plastic Surgical Service.

Case Report

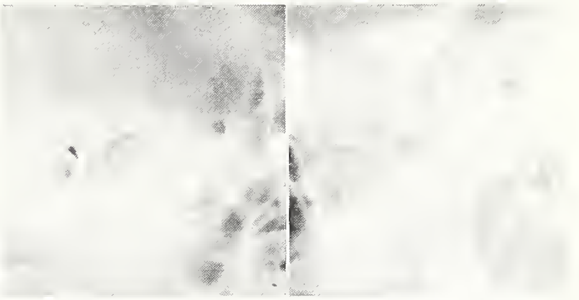
Case No. 1: Patient is a 60-year-old white female, who was originally examined by a physician because of a ten year history of left temporal headaches associated with pain in the left temporomandibular area. Following examination, analgesics and sedatives were prescribed for symptomatic relief. Six months later, the pain radiated down the left side of the mandible and was more pronounced during mandibular excursions.

The patient was examined by a dentist who noted malocclusion and partial edentulism resulting in loss of vertical dimension. Her occlusion was restored, but her symptoms were not completely abated. She was discharged and continued to use medication for relief of her symptoms.

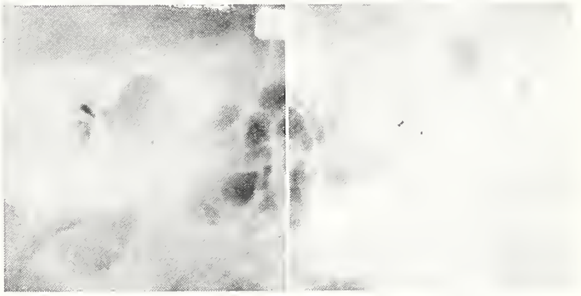
Eight months later, she was examined at St. Louis University Medical Center with the aforementioned complaints. At this time, X-rays of the temporomandibular joints were taken (Fig. 1). They revealed a definite calcific spur on the articular surface of the left condyle.

Intra-articular anesthetic injections were performed, but there was no relief of pain. Since she continued to have pain after the occlusion was restored and failed to respond to local anesthetics, the patient's left temporomandibular joint was explored. The articular disc and calcific spur were removed. Her postoperative course was uneventful and the patient has been symptom free without limitation of mandibular excursions.

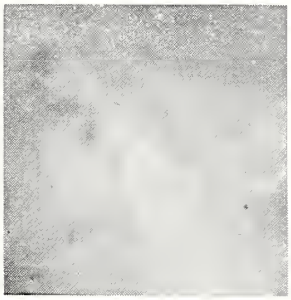
Case No. 2: Patient is a 52-year-old white male, who was originally admitted to the neurosurgical service for a six year history of right trifacial neuralgia. He had a complete neurological workup, which included skull X-rays, cerebral arteriograms and an electroencephalogram. He was classified as "atypical facial pain" and placed on medication. He remained in the hospital for one month with no relief of symptoms. Further examination on our service revealed that the facial pain actually began in the



LEFT CLOSED RIGHT CLOSED



LEFT OPEN RIGHT OPEN



LEFT CLOSED
POSTOPERATIVE

Fig. 1 X-ray photographs of temporomandibular joints in Case No. 1. The right temporomandibular joint is negative. The left temporomandibular joint reveals a calcific spur on the articular surface of the condyle. The postoperative X-ray reveals removal of both articular disk and calcific spur.

right temporomandibular area six years previously, when he had full mouth extractions for carious teeth. Since then he had no denture replacement and, on examination, it was noted that the patient had a closed bite with loss of vertical dimension. This manifested grossly a reduction in the lower one-third of his face, and the commissures of the mouth were directed downward (Fig. 2-A). The pain was aggravated by mandibular excursions. X-ray study of the temporomandibular joints revealed narrowing of the articular space on the right side with minimal erosion of the articulating surface of the condyle (Fig. 3).

A provocative test was performed by injecting Xylocaine into the right temporomandibular joint space. The patient's symptoms were relieved for the first time in six years. He was referred to the dental service, where a full denture was constructed with careful attention to restoring vertical dimension. While the denture was being constructed, injection of Hydrocortone was given to the affected joint.

Following the Hydrocortone injection and placement of full dentures, the patient has been free for eight months. Follow up X-rays revealed widening and clearing of the articular space (Fig. 2-B).

Case No. 3: Patient is a 35-year-old white female with the complaint of bilateral temporal headaches. She was initially seen by a neurosurgeon who referred her for care.

Examination of the patient's mandible revealed the condylar excursion to be very wide bordering on subluxation of the temporomandibular joints. The dental occlusion was good and she had had excellent dental care. X-rays of the temporomandibular joint revealed no pathology other than the wide range of motion of the condyle in the open position.

Therapy consisted of intermaxillary wiring of the dentition with rubber band traction. This was followed by periodic injection of Hydrocortone. Fixation was maintained for four weeks, at which time, the subluxation had dissipated with relief of pain. She has remained symptom free for one year.

DISCUSSION

Difficulties related to the temporomandibular joint were initially described by Sir Ashley Coop-

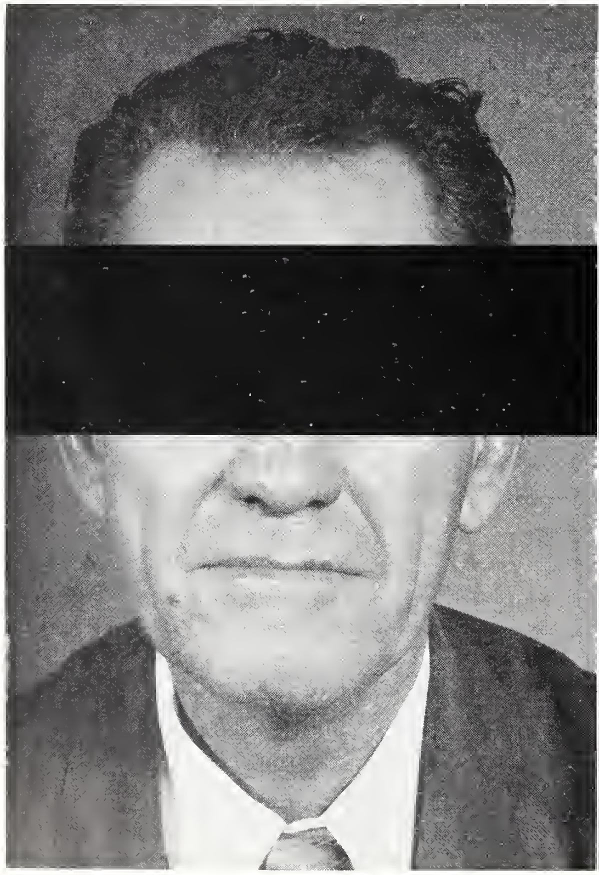


Fig. 2-A Photograph before treatment was started reveals loss of vertical dimension in lower one-third of face. (Distance from tip of nose to tip of chin.) This is characterized by the commissures of the mouth being directed downward with a closed bite resulting.

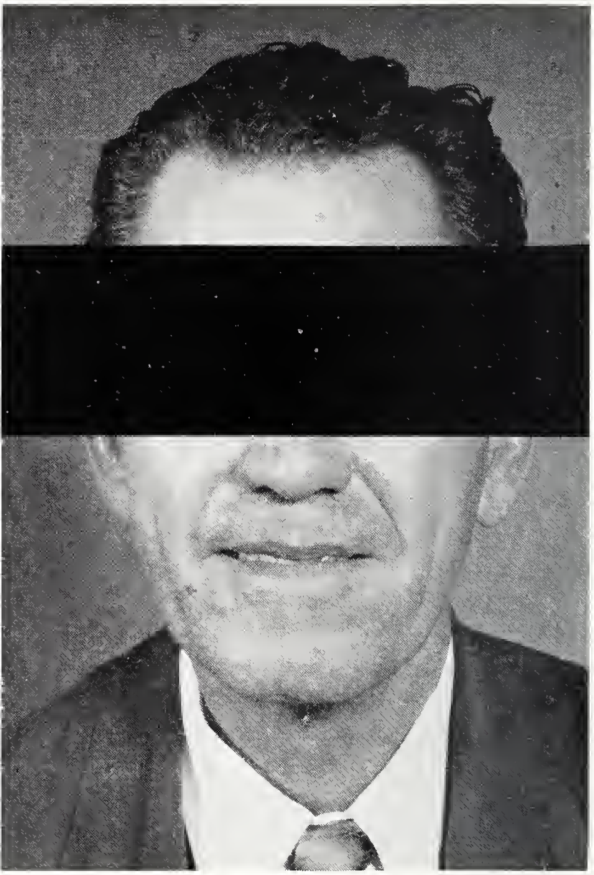


Fig. 2-B Post treatment reveals increase in vertical dimension in lower one-third of face by full denture replacement.

Problems relating to the temporomandibular joint have been the subject of concern for more than 100 years by oral surgeons, otolaryngologists and maxillo-facial surgeons. The three cases presented here represent the multiplicity of etiological factors which can be responsible for discomfort or pain. The authors advocate conservative measures as the first step in treating temporomandibular pain. Doctor Korkos is a resident and Doctor Paletta is from the Department of Surgery, Plastic Surgery Section, St. Louis University School of Medicine.

er in 1822. Oral surgeons, otolaryngologists and maxillo-facial surgeons have written on this difficult problem. Many of these patients have been seen by neurologists[1, 5] because of the severity of the pain. Prentiss, a dentist, in 1918 described the concept of dental malocclusion and its resultant effect on the temporomandibular joint. Summa, in the same year confirmed this concept by studying and correlating the occlusion of temporomandibular joints in cadavers. Costen,[2] an otolaryngologist, in 1935 described the so-called temporomandibular syndrome. Dingman and Moorman[3] and later, Martin, Trabue, and Leech,[4] described the surgical management of the temporomandibular joint. Conservative management of the acute painful episodes in temporomandibular joint disease is usually helpful. Rest, sedation, immobolization of the jaw and dental measures to correct the occlusion of the teeth are frequently successful. Dingman reported 12 successful operations, removing the meniscus of the temporomandibular joint.

Rheumatoid arthritis occasionally is responsible for derangement of the temporomandibular joint. Cruveihleir in 1850, first described a classical case of rheumatoid arthritis. When it does occur, it is seen in the middle age group. Osteoarthritis of the temporomandibular joint is seen in the older age patient.

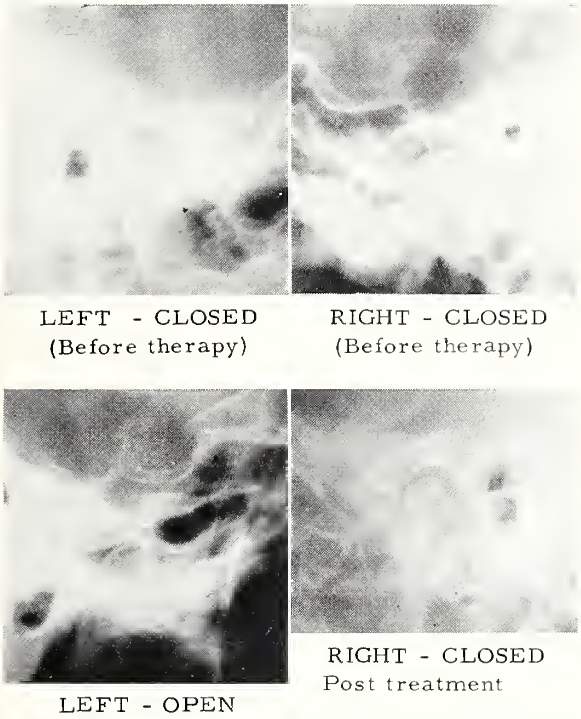

LEFT - CLOSED
(Before therapy)
RIGHT - CLOSED
(Before therapy)
LEFT - OPEN
RIGHT - CLOSED
Post treatment

Fig. 3 X-ray photographs of temporomandibular joints in Case No. 2. Left temporomandibular joint is negative. Right temporomandibular joint reveals narrowing of intra-articular space with irregularity of articular surface of condyle. Post treatment reveals widening and clearing of intra-articular space.

The three cases presented represent the multiplicity of etiological factors that can be responsible for temporomandibular pain. It indicates that each case needs to be thoroughly evaluated.

It is essential in treating problems of the temporomandibular joint that conservative measures be carried out first. This implies restoring the dental occlusion and removing premature contacts created by dental restorations or prostheses. These problems magnify themselves in the position of the condyle in the glenoid fossa. It is important to appreciate that the etiological factors that provoke temporomandibular joint dysfunction are both medical and dental in origin, and a combined approach in treatment is necessary. The treatment of intermaxillary wiring with Cortisone injection is a favorable treatment in younger patients and does give relief of pain in many cases. Temporomandibular X-rays may or may not be contributory. If all conservative measures fail, then definite surgical sectioning of the meniscus and reconstruction of the temporomandibular joint is indicated.

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Subacute Cortical Cerebellar Degeneration Associated with Occult Carcinoma

Case Report

In recent years a small number of cases of subacute cortical cerebellar degeneration (SCCD) have been reported in association with carcinoma elsewhere in the body. As yet no light has been thrown on the exact pathogenesis of this condition, and the number of cases has been too small for statistical evaluation. In 1929 Casper published the first case of SCCD associated with carcinoma of the breast. Since that time other cases of SCCD have been reported and it has become apparent that the association of SCCD with carcinoma is probably more than coincidental. The condition may be more common than suspected, since it is possible that some cases of known carcinoma with development of CNS symptoms would have these symptoms attributed to cerebral metastases, while the degeneration of Purkinje cells of the cerebellum as well as other changes could be overlooked.

In 1951 Brain *et al* published four cases of SCCD in which there was carcinoma of the bronchi in two cases and carcinoma of the ovary in one. In the fourth case only the brain and spinal cord were available for examination, therefore, it was unknown if carcinoma was present. Of the three cases with carcinoma two were also found to have degeneration of the long fiber tracts of the spinal cord. Other similar cases with carcinoma of the ovary have been reported (Downey, McDonald). In 1957 Auth and Chodoff reported a case of SCCD with carcinoma of the colon. Brain and Henson summarized a number of cases in which carcinoma of the lung and ovary were most frequently seen with SCCD, but other sites of carcinoma included prostate, breast and rectum. The following is a case of a patient who presented the clinical and pathological findings of SCCD, and who suffered from an ovarian carcinoma which, however, was not suspected until the autopsy.

Presentation of a case of subacute cortical cerebellar degeneration associated with occult carcinoma of the ovary. Like the small number of similar cases which have been reported in recent years, this one throws no light on the exact pathogenesis of the condition. A significant number of these SCCD cases did suffer from carcinoma. Doctor Owings is Pathologist and Doctor Hopkins, Internist, Bothwell Memorial Hospital, Sedalia. Doctor Kepes is a Neuropathologist, University of Kansas School of Medicine.

Case Report

A 57-year-old white female was admitted to the Bothwell Memorial Hospital with chief complaints of dizziness, unsteady gait and weakness with an onset a week prior to admission. The weakness was primarily of the right arm and leg and was first noted while driving. Approximately one week prior to admission, she had had a rather severe frontal headache, and stated that she had had intermittent headaches for one year previously. A short time prior to admission she had noted the onset of diplopia.

Past history and family history revealed admissions several years previously, the last of which was for skin rash following drug therapy. She recovered from the drug reaction with no difficulty. She also stated that a daughter had questionable multiple sclerosis.

Physical examination on this admission revealed a rather thin, white female who appeared to be chronically ill, but with no other gross findings. The neurological examination revealed deep tendon reflexes to be present and equal, no pathological reflexes present and no definite muscle weakness at this time. Slight ataxia was noted, and she had some difficulty in her speech. The laboratory examination on admission revealed the urinalysis, hematology and chemistry tests to be within normal limits and the VDRL was non-reactive.

Her hospital course during this short admission was uneventful but the ataxia, difficulty in speech and her complaints of weakness in the right arm and leg persisted. She was at this time transferred by her local physician to the care of a neurologist.

Physical examination following her transfer revealed vital signs to be stable with blood pressure at 150/90, pulse 90 and temperature 98.6 degrees. She was a rather thin, white female appearing chronically ill and with a slurred speech. She had a punctate exudative rash over both ankles. The neurological examination revealed the patient to be alert, oriented, cooperative and able to follow commands. Cranial nerves were normal. No papilledema was found. There was noted equivocal weakness and slight ataxia on the right side. Deep tendon reflexes were equal and active, and no pathological reflexes were noted. Pain and vibratory sensations were intact and there were no signs of meningeal irritation. Laboratory tests were in general normal with the exception that the urinalysis revealed several white blood cells in the urine. Spinal tap revealed normal opening pressure and normal cell count, glucose and protein. The spinal fluid colloidal gold curve revealed a paretic or first zone curve. The erythrocyte sedimentation rate was 34 and 36 millimeters per hour on two occasions. Serum VDRL was non-reactive and the SGOT was 20 units. LE cell preparations on three occasions were negative. X-ray studies were negative for chest and skull examination. Left carotid angiograms were performed and reported as showing no evidence of significant displacement or distortion of the vessels. No aneurysm or tumor was noted. Pneumoencephalogram showed normal filling of the ventricles with no evidence of displacement or distortion. An electroencephalogram was performed which was interpreted as being abnormal, showing features which suggested that there may be a "deep lesion or trigger point more left-sided if supratentorial, and more right-sided if infratentorial."

During her hospital stay at this latter institution she became somewhat more obtunded and withdrawn, but remained responsive at all times. On one occasion, however, she suffered three generalized major motor seizures without apparent focal origin and was treated with barbituates. She was discharged to the care of her family physician and classified as an undiagnosed disease of the central nervous system, possibly leukoencephalopathy. Her progress was steadily downhill and she exhibited a definite right hemiparesis, became more severely obtunded, and had numerous grand mal seizures without apparent focal origin. On one occasion she had a prolonged period of status epilepticus. She developed pain which required moderately large doses of barbiturates and analgesics for its control. A short time prior to her demise she developed a respiratory infection which could not be controlled with antibiotics and she expired quietly.

Postmortem examination revealed a thin, white female of approximately the stated age of 57 in which gross physical findings were limited to the lungs, liver, spleen, left ovary and uterus. The lungs showed bilateral severe bronchopneumonia. The liver and spleen showed passive congestion. There was noted a tumor of the left ovary, measuring approximately 6.0 cm. in greatest diameter, which was light grey on cut-section. The tumor was primarily solid although a few small, rounded cystic spaces were found. One small lymph node was found in the lower aortic chain which on cut-section was rather firm, light grey and quite suspicious. Small leiomyomata were found in the myometrium. No unusual features of the brain or spinal cord were noted grossly.

Microscopic examination confirmed the presence of severe bronchopneumonia, passive congestion of liver and spleen, and leiomyomata of the uterus. The tumor of the left ovary was found to be an adenocarcinoma (Fig. 1), primary in the ovary with metastasis to the one suspicious lymph node noted grossly. No other evidence of metastases were found either grossly or microscopically. Sections of the central nervous system revealed mostly non-specific changes of the neurons consisting of some chromatolysis of some nerve cells in the cortex and the basal ganglia. There was also a mild lipofuscin deposition in cortical neurons.

The cerebellum, in contrast, showed most striking changes. Whereas the molecular and granular layers were well recognized, most of the Purkinje cells had simply disappeared. Long stretches of the cerebellar folia could be followed under the microscope without seeing a single Purkinje cell. The ones that were occasionally present appeared quite shrunken and degenerated. A marked proliferation of glial cells was observed in the layer previously

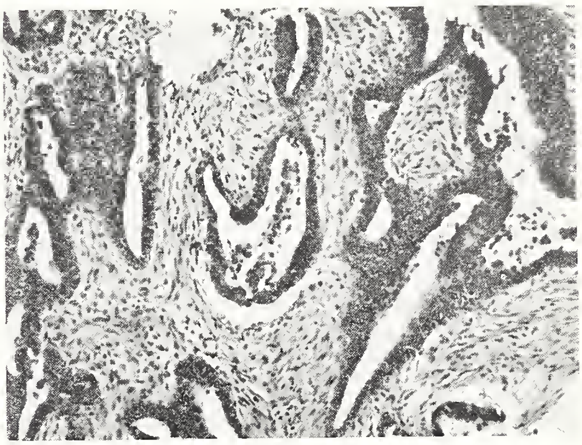

Fig. 1 The tumor of the ovary consists of strands of neoplastic epithelial cells forming gland like structures in a loose connective tissue stroma, consistent with primary adenocarcinoma of the ovary. (H.E. stain.)

occupied by the Purkinje cells (Fig. 2). Holzer stain for glial fibers showed many vertical processes emanating from these cells reaching the surface of the molecular layer (Fig. 3). Purkinje cells are normally surrounded by nerve fibers descending from the so-called basket cells of the molecular layer. Remnants of these fiber baskets could be demonstrated even though the Purkinje cells were missing (Fig. 4).

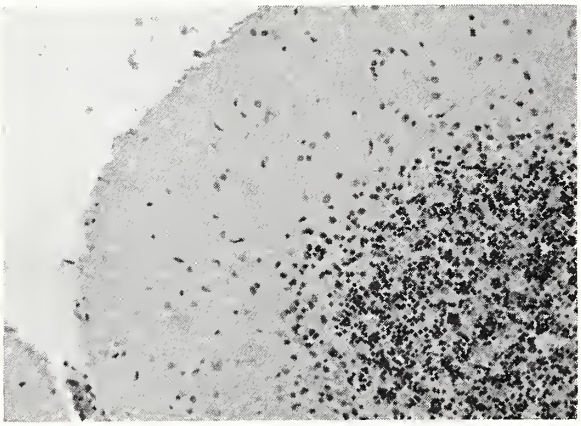

Fig. 2 The molecular and granular layers of the cerebellum are preserved but the Purkinje cells are missing and are replaced by proliferating glial cells. The glial nuclei are slightly larger than the nuclei of the nerve cells in the granular layer. (H.E. stain.)

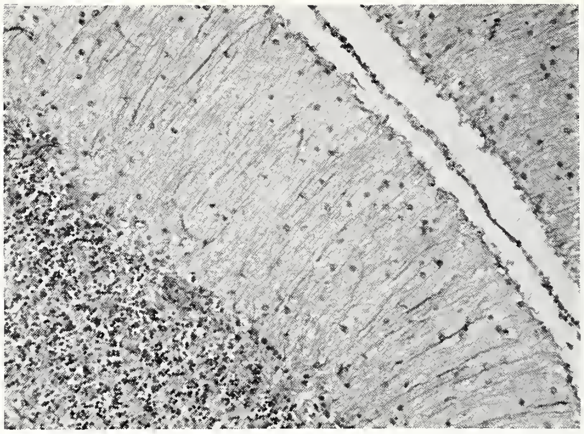

Fig. 3 Many vertical glial fibers extend through the molecular layers to the surface in a parallel fashion. (Holzer's crystal violet stain for glial fibers.)

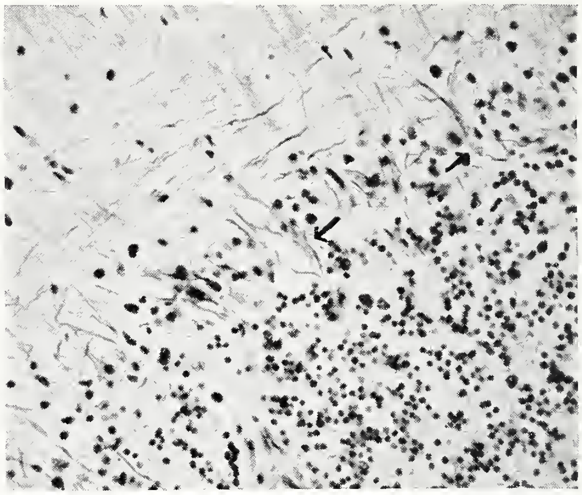

Fig. 4 Empty fiber baskets (arrows) are seen indicating the site of the missing Purkinje cells. (Bodian's silver impregnation for nerve fibers.)

Discussion

In the case reported, the disease progressed from the first onset of symptoms to death of the patient in less than six months. Postmortem examination revealed degeneration of the Purkinje cells of the cerebellum and there was also found an unsuspected tumor of the ovary with metastasis to only one regional lymph node. In this case, the age of the patient, symptomatology, course and termination of the illness were quite comparable to the cases presented by Brain and co-workers in 1951. In the present case there was a carcinoma of the ovary. In previously reported cases of other investigators the tumors were most frequently noted in the ovary and lung. In our case the ovarian carcinoma was unsuspected until the autopsy. In most previously reported cases the initial presenting symptoms included ataxia, dysarthria, weakness and diplopia, and indeed in our case these were the presenting symptoms. In the majority of previous reports the illness had run its course in less than two years, and in most instances less than one year. The fact that central nervous system symptoms in cases of known carcinoma are often attributed to metastases to the brain could account for the relatively few cases which have been reported of this disease. Generally the degeneration of the cerebellum primarily affects the Purkinje cells and to a lesser degree the granular layer and leaves nerve fiber "baskets" and the glial fibers intact. Cases have been reported in which there was also degeneration of the long tracts of the spinal cord; however, such spinal cord degeneration is not a constant feature and indeed was not noted in the present case. Cases of peripheral neuropathy have also been described associated with SCCD.

The cause of Purkinje cell degeneration in some patients with distant carcinoma is, as yet, not well understood. Purkinje cells are known to fall victims to various conditions such as anoxia, hypoglycemia, heat stroke, exogenous poisons (e.g. lead), etc. A malignant tumor growing elsewhere in the body could theoretically affect the cerebellum through some toxic substance produced by the tumor or by depleting the body of some needed vitamin-like substance, the lack of which would affect the metabolism of Purkinje cells. The existence of such pathogenetic factors has not been proven as yet. Sensitization of nerve cells to metabolic products of the neoplasm has also been considered. In our case there was a positive history of allergies. Also the patient's daughter was suspected of having multiple sclerosis, another disease of the nervous system considered by many to be an autoimmune disease. Nevertheless, the allergic nature of the cerebellar changes in distant carcinoma are not yet proven.

The clinical history strongly suggests that other parts of the brain were also involved to some extent as manifested by extracerebellar symptoms (e.g. diplopia), but only in the cerebellum were the changes anatomically manifest by the rather dramatic absence of so many Purkinje cells.

Summary

A case of subacute cortical cerebellar degeneration associated with occult carcinoma of the ovary is presented. The presenting symptoms included ataxia, weakness and diplopia. The course of the illness was less than six months, and the cause of death was bronchopneumonia which had resulted from the debilitated condition of the patient and her progressive downhill course in the last weeks of her illness. Most previously reported cases of SCCD terminated in less than two years after the onset of symptoms and a significant number of these subacute cases did suffer from carcinoma.

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By doing some basic biochemical sleuthing, scientists at The Upjohn Company have found that an experimental antitumor drug, cytosine arabinoside (CA), is deactivated by an enzyme in cultures containing human cancer cells. Further detective work has shown that this deactivation can be controlled or partly prevented by adding to the cell cultures, along with CA, the very breakdown product of the drug. That product is uracil arabinoside (UA), which is biologically inactive. A research team told the annual meeting of the American Association for Cancer Research that extension of this work will hopefully give clues on how to study the drug more effectively in the clinic where it is now being tested in human cancer patients. It was found that body cells, including cancer cells, contain a specific enzyme which can convert CA to UA by deamination (in the patois of biochemists, the removal of a nitrogen and two hydrogen atoms from the parent compound). This deamination limits the drug's ability to combat cultured cancer cells. Paradoxically, it appears that when the breakdown product of this process, UA, is added along with CA to these cells, the conversion of CA to UA is delayed. Thus the drug is maintained in its active form.

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Gas Gangrene: A Preventable Disease

Case Reports

Gas gangrene is one of the oldest diseases known to man, being first described by Hippocrates, and one of such consequence as to demand the labors of Pasteur, Koch, Welch and Novy.[1] It reached such proportions that Larrey,[1] one of Napoleon's war surgeons, advocated the early amputation of severely injured extremities to prevent "traumatic gangrene." The mortality during the first World War was reported as 44-48%,[3] and one mortality report from World War II was 31.3%.[3] This contrasts with one hospital report in Korea where only eight cases of gas gangrene were observed in over 12,000 battle casualties and no deaths were reported.[3] The difference was due to the application of simple fundamental surgical principles and adequate antibiotic therapy. The fact that gas gangrene continues to be a problem in Missouri is the subject and point of this report. To emphasize the importance of the problem four cases of gas gangrene admitted to the surgical service of the University of Missouri Hospital in one consecutive 30-day period are reported.

Etiology—Pathogenesis

Gas gangrene may be defined as a fulminating myonecrosis, arising from a devitalized area of tissue infected with Clostridial organisms. *Clostridium perfringens* (Welchii) is most frequently involved but *C. Novyi* and *C. Septicum* may also be incriminated.

Their virulence is due to a potent exotoxin which produces (1) pain, (2) tachycardia, (3) fever, (4) weakness, (5) pallor, (6) profuse sweating and (7) local tissue destruction. Examination of the tissue reveals crepitation, edema, bulla formation and a "fetid sweet odor." If surgical intervention is not immediate the course is rapidly fatal. Prevention by proper wound care is much more important than surgical or medical therapy.[4]

The following four patients were seen at the University of Missouri Medical Center in a one month period. They were selected to delineate the problem in Missouri. However, four such cases in a one month period is admittedly unusual.

Case Reports

1. A 10-year-old white male was seen in the University Hospital emergency room 48 hours following an auto accident in which he sustained an open fracture to the left tibia and fibula. Initial treatment before transfer had consisted of debridement, internal fixation with a metal plate and primary closure. He had received tetanus antitoxin, antibiotics and gas antitoxin. When examined at the Medical Center the patient was toxic with a temperature of 105° F and pulse of 160. Examination of the left lower extremity revealed a brawny discoloration to mid-thigh with crepitance and a foul odor. The wound was opened with the finding of a perfectly reduced fracture (by internal fixation) but with gravel, dirt and grass covering the metal plate. He was immediately given massive doses of penicillin and taken to the operating room where a guillotine above knee amputation was performed. His temperature promptly dropped to normal. Culture of the wound grew *Clostridium perfringens.* Subsequently, amputation of the opposite leg was found necessary due to vascular injury.

2. The second patient treated in this 30 day period was a 22-year-old white male who was involved in an auto accident 67 hours prior to his admission at the University Hospital. He sustained an open fracture of the left radius, ulna and humerus. Initial debridement had not been performed until 36 hours following the injury, yet primary closure was performed prior to transfer to the Medical Center. On admission his pulse was 132, temperature 103.6° F and he had a foul smelling, discolored left upper extremity. Foreign matter in the form of dirt and grass were found in the wound (which had been closed primarily). The patient was given massive doses of penicillin and an immediate open above elbow amputation was performed. He recovered satisfactorily. Bacterial culture later yielded *Clostridium perfringens.*

3. The third patient treated was a 52-year-old white male who had sustained 3° burns to 50% of both lower extremities 15 days prior to his admission. Initial treatment on the day of injury consisted of hospitalization, cleansing and wrapping the

extremities tightly with firm dressings. He was given six units of plasma over the next 15 days but the dressings were never changed. When admitted his temperature was 101.8° F with a pulse of 130. He was placed in the Hubbard tank to remove the dressings. The soft tissue of both lower extremities was necrotic, crepitant and had a foul odor. Bilateral above knee amputations were performed following the administration of 30 million units of aqueous penicillin and 20,000 units of tetanus antitoxin. The cultures grew *Clostridium perfringens*. Recovery was uneventful.

4. The fourth patient was 42-year-old white male diabetic who was admitted to his home hospital because of diabetic acidosis. He had a moderately severe dermatitis of the inguinal region bilateral. His course was progressing unsatisfactorily and he was transferred to the University Hospital. Examination revealed the lower abdominal wall to be discolored, crepitant and foul smelling. He died 3 hours following admission with a diagnosis of gas gangrene of the lower abdominal wall.

DISCUSSION

Because of the prevalence of Clostridial organisms in soil, water, sewage and human skin, prevention must of necessity be directed toward wound care. Factors contributing to the production of Clostridial infections are well known and listed as follows: (1) ischemia, (2) extensive destruction and devitalization of tissues, (3) soil contamination, (4) open fractures, (5) retention in wound of clothing and other foreign material, (6) delay and/or inadequate wound debridement and (7) anaerobic condition. Specific preventable factors contributing to the development of gas gangrene in each of the presented cases are listed in Table 1.

Ischemia may be avoided by the immediate repair of vascular injuries and the avoidance of dressings which are constricting. Extensive destruction and devitalization of tissues require adequate debridement even if this necessitates the sacrifice of function. Soil contamination of wounds requires extensive cleansing with manual scrubbing if necessary. We accomplish this by hanging a sterile can on a stand at the operating table and irrigating the wound copiously with several liters of sterile saline. Open fractures should be debrided, cleansed, reduced and maintained by plaster immobilization or skeletal traction only. **Only in extremely rare cases should foreign bodies, such as metallic plates, screws or other devices, be introduced into an open wound.** In the past three years on the orthopedic service at the University of Missouri Medical Center it has not been necessary to use metal in an open fracture. Needless to say, other foreign objects such as grass, clothing, rocks or other debris must be removed. In Cases 1 and 2 the wounds were found to contain gravel, bits of leaves, grass and other debris. We feel that a wound should be closed primarily only if the wound is clean, if tissue damage is only moderate and if we are able to do this in less than eight hours from the time of injury. If the wound is foul, tissues are markedly devitalized and the interval since injury longer than eight hours, debridement and cleansing are performed, the wound is packed open and secondarily closed seven to ten days later. This well known war time principle avoids creating the very anaerobic conditions that are necessary for the growth of Clostridia.

The validity of the title of this paper has been demonstrated by the medical history of the Korean War. The authors conclude that prevention of gas gangrene rests with application of simple fundamental surgical principles and adequate antibiotic therapy. The four cases presented here were treated at the University of Missouri Hospital in a one month period. Doctors Russell, Modlin and Almond are from the Department of Surgery, University of Missouri School of Medicine.

TABLE 1

CASE SUMMARIES

	Preventible Factors Contributing to the Development of Gas Gangrene
Case 1	1) Inadequate debridement
	2) Insertion foreign body in contaminated wound
	3) Primary closure contaminated wound
Case 2	1) Delayed and inadequate debridement
	2) Primary closure of contaminated—36 hour old wound
Case 3	1) Inadequate debridement (Dressings not changed—15 days)
	2) Dressings applied tight enough to impair circulation
Case 4	1) Inadequate treatment of local infection
	2) Lack of diabetic control

In the past, effective therapy has often necessitated amputation of the involved portion of the body. This occurred in three of our cases. The recent re-introduction of hyperbaric oxygen therapy by Beorema[2] in Amsterdam may alter this picture. Hyperbaric oxygen therapy has been successful in decreasing the mortality of gas gangrene and in decreasing the number of limbs lost. Universal hyperbaric oxygen therapy will not be available, however, until centers for its use are established. Also, hyperbaric oxygen therapy is not a replacement for prevention of gas gangrene by adequate wound care.

SUMMARY

Four cases of gas gangrene that were treated at the University of Missouri Hospital in a one month period have been discussed. These cases were presented to emphasize the continuing presence of the problem of gas gangrene in Missouri and to stress the necessity of strict observance of well known principles of prevention of gas gangrene.

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The wise, and presumably safe, use of a drug depends largely on the education, training, experience and judgement of the prescriber. And to an important extent it also depends on the wisdom of the patient as he follows instructions.—Austin Smith, M.D., in *Experimental Medicine and Surgery,* 22:2-3, (June-Sept.) 1964.

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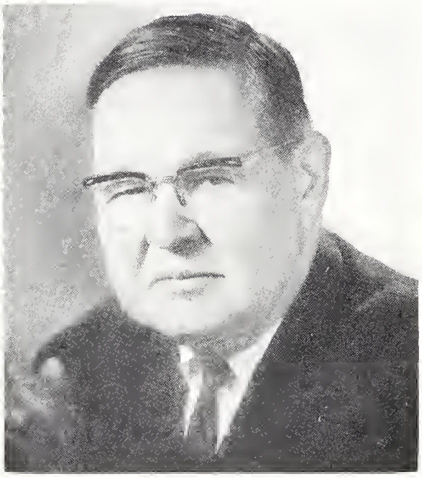

Paul R. Whitener, M.D.

President's Message

This is the first President's Message by Paul R. Whitener, M.D. The Message is an excerpt from the remarks which Doctor Whitener made on Sunday, April 4, 1965 before the House of Delegates at the 107th Annual Session of the Missouri State Medical Association.

I should like to consider with you briefly the problems and opportunities that lie ahead of Missouri State Medical Association in the coming year.

First, for the problems. As we are all vividly aware, the national House of Representatives is on the point of taking action on a composite and complex measure profoundly affecting the ways in which health care is to be financed and provided for persons over 65, for disabled persons, for dependent children and for welfare recipients generally. It is too early for us realistically to assess in detail what the impact of this legislation will prove to be should the Congress adopt the measure, as seems likely, in its present form.

We may, however, assume one thing for certain. The implementation of such a far-reaching Federal program will raise an infinite number of complex problems. Meeting these problems will demand of American medicine the greatest degree of strength, courage, insight and patience in negotiation. These qualities on our part will be essential if we hope to channel new political and social forces in acceptable directions compatible with the freedom of our profession and the well-being of our patients. The present time demands more of us than has ever been demanded in the past. I am confident that, as the picture is clarified, the doctors of Missouri through their association will not be found wanting in their contributions to the national efforts of our profession to safeguard values of fundamental importance to medical progress and patient care.

My hope for the year ahead is that we shall respond to this hard new challenge as physicians and as citizens. All other problems before us have secondary importance in relation to this over-riding challenge.

As to the opportunities we may expect to make the most of in the coming year, I should like to emphasize briefly the following.

The year will be, I hope, one of renewed and intensified dedication to our patients. It has been my personal experience that my activity in recent years in the programs of the state association has enabled me to see more clearly than ever the goal toward which all these programs are finally directed: the goal of better patient care. Scientific advances have brought our profession to the threshold of a wide new opportunity for service. In the next year I hope our association will direct increased efforts to the fuller realization of the opportunity.

Specifically in this connection, I want to emphasize the importance of strengthening and coordinating programs for continuing medical education. An exploratory meeting was held last February at the University of Missouri at which representatives of MSMA, the Academy of General Practice and the Missouri Division of Health conferred with representatives of the Medical School on means for doing a better job in this important task of helping practicing physicians keep abreast of scientific developments.

Since that meeting, Dr. Lester Wolcott, chairman of the University Medical School Committee for Continuing Medical Education has drafted a proposal which, I hope, will be thoroughly reviewed by the Council of MSMA at its first meeting following this annual session.

Briefly, the proposal calls for the strengthening of the MSMA Committee on Scientific and Post-Graduate Work which has functioned so well under the able chairmanship of Dr. Jack Matthews. I expect to name to the Committee a sufficient number of physicians so that each councilor district is represented. It is thought that the chairman of the Missouri University Committee for Continuing Medical Education might be an ex-officio member of the MSMA committee and equally that the chairman of our committee might serve ex-officio with the university group.

It is further proposed that Councilor District Committees for Continuing Medical Education be set up under the chairmanship of each district's representative on the state committee. The thought here is that by this mechanism the needs and interests of doctors in every area of the state might be regularly assessed and arrangements made to bring to them the kind of continuing educational opportunities they need and want. Finally, it will be considered how the combined resources of the three medical schools in Missouri and other organizations and agencies interested in this project may be brought to bear in a coordinated way to advance the over-all program and to avoid inefficient duplication of effort.

It appears to me that the broad outlines of this suggested approach offer great possibilities for the practicing physicians and for the people of Missouri. I am confident that the Council will give the matter careful deliberation and that the result will be a major forward step for medicine in our state. In the meantime, I should like to ask you as individual physicians representative of your areas to think of nominees for the Councilor District Committees for Continuing Medical Education.

One other broad opportunity that lies before us in the coming year is the chance it brings us between national and state elections to develop closer ties with the communities we serve and with leaders and groups concerned for the progress of our state. In this connection I hope our public service activities may be stepped up in the coming year, and that every component society and every individual doctor will feel an obligation to help build a better public understanding of the role of the medical profession in a time of apparent and potentially dangerous change in our social and institutional arrangements affecting health care.

One area in which I should like to see us take an increased initiative in the coming year is in building closer relations between medicine and religion. From time immemorial this relationship has existed. It will continue to exist so long as men approach the over-riding mysteries of sickness and health, life and death with reverence and with awe. I hope the year ahead will record progress toward a closer relationship between medicine and the clergy and between doctors and church people.

In our efforts in the year ahead to build a stronger and a better understanding between the profession and the public, I hope every doctor will contribute. I want also in this connection to mention in passing the action of the council to set up grievance committees at the Councilor District level to resolve misunderstandings between patient and doctor as these may occasionally and inevitably arise. These committees will require the support and cooperation of the doctors in each area.

As I said at the outset, I come to the start of my term of office in fear and trembling. I am conscious of the honor you have given me. I shall do my best to meet the responsibilities with the help I know I shall have from all of you.

Paul R. Whitener M.D.

EDITORIALS

PERSONAL INVITATION

The year 1965 is a crucial year for American medicine. It is a year in which important and far-reaching events are transpiring that may have a long-lasting impact on how we practice medicine in America.

An outstanding highlight in medicine in 1965 will be the 114th annual convention of the American Medical Association June 20-24 in New York City. It is our conservative estimate that more than 10 per cent of all American physicians, and perhaps as many as 15 per cent of those in private practice, will register for the New York convention.

Nowhere else in the entire world do physicians gather in such numbers to continue their medical education in an intensive short course that, literally, has something for everyone. Hundreds of scientific papers will be presented by the top medical scientists of our time, from foreign lands as well as our own country. Newest teaching films will be shown. Hundreds of scientists will offer exhibits in which the entire spectrum of medical progress in 1965 will be on view.

American physicians do not attend the AMA annual convention just to take a trip to New York, although that is an interesting sidelight. They attend because they have learned through the years that nowhere else can they find out so much about new developments in medical practice; where they can learn many things that will be of inestimable value to them in their own practices.

The Council on Postgraduate Programs of the AMA has done an outstanding job in preparing the scientific programs for the 114th annual convention. This is the single most important medical scientific meeting in the world this year.

On behalf of your professional society, the American Medical Association, I urge personally that every physician in America attend the June convention.

DONOVAN F. WARD, M.D.
President, American Medical Association

PLEASE, MR. NIGHTINGALE!

In the November 21 issue of *The Greater Kansas City Medical Bulletin* there appeared a reprint of an article credited to a Mr. Earl Nightingale of Chicago, Illinois. It was an angry piece taking doctors to task for keeping patients waiting in their reception rooms and generally attributing to the total disregard of the public's right to a reasonable and valid appointment schedule. Pursuing his thesis to its vituperative conclusion, he was able to convince himself that (1) the inconveniences were deliberately contrived and (2) that its purpose was to somehow enhance the physician's own sense of importance.

To the busy doctor who read the stinging rebuke, perhaps at the end of a long and frustrating day of trying to "keep up," this must have seemed unfair and hypercritical. It was.

It must be said, of course, that few persons really have time these days to simply waste, and anyone on a tight schedule may be excused for being resentful when it occurs. They may perhaps also be excused for not understanding all the factors involved in the delay which inconvenienced them.

For the doctor to sit down and explain that a tonsil bled a little more than usual this morning; that an unexpected consultation had to be worked in; that a visit with Mrs. Black which should have taken 15 minutes required 30 because of new family problems, and that the tragic news of a malignancy had to be broken ever so gently to a young mother and father would surely bog down the "schedule" still more. If it were practical to indicate some of these problems, most people—perhaps even the agitated Mr. Nightingale, would probably be more charitable.

In this article, the doctor is portrayed as having packed his appointment book primarily for the purpose of adding to the day's receipts, then deliberately making his patients wait as he contemplates with relish the impression of "business" he is creating.

It is probably more accurate to picture him as rushing pell-mell from room to room, his blood pressure a good 20 points above normal, attempting to practice conscientious medicine amid the glowering looks of his waiting patients and the insistent prodding of his receptionist.

There has to be an easier way to "feel important."

Still, there is a problem, and it must be recognized. No one is happy about it. Solutions are being sought. Meanwhile, let's say that patients must wait because there is a doctor shortage, or a lack of good management, that medicine is a profession which defies rigid scheduling; but please Mr. Nightingale, *not* because it makes the doctor feel important!

FREDERICK J. McCOY, M.D.
President, Jackson County Medical Society

Age 12-13 — not too soon to pay attention to her acne

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COMMENT . . .

Our Readers Write

To the Editor:

All members of the Missouri State Medical Association received in February a letter from the secretary of the Missouri Society of Pathologists in which this society reiterates, "their previous position of providing free laboratory work for indigents and at reduced fees for near-indigents, as does any other physician in the state."

The Division of Health applauds this stand by the pathologists. It is in keeping with a suggestion which I made before the MSMA in 1958 and which I repeated last November in Springfield at a meeting of pathologists. We commend this action because it indicates a willingness on the part of organized medicine to become involved in the distribution of medical care, a proper part of its responsibility. This in turn, lends support to the Division of Health policy to utilize its facilities **only** in programs vital to public health and where private facilities are either inadequate or unavailable.

Our state is fortunate to have many private laboratories capable of performing the highest quality of work. The Division of Health cannot, and has no reason to, compete with these private facilities.

Unfortunately, in other portions of the letter from the pathologists, statements are made that cannot be applauded. One such statement is the reference to the phenylketonuria (PKU) testing program and the involvement of the Division of Health in the program.

In 1960 Dr. Robert Guthrie of Massachusetts perfected a method to identify PKU within the first week of life. The new test held implications of tremendous importance in the prevention of mental retardation and the procedure has received extensive application throughout the nation. It was felt that Missouri needed such a program. Therefore, a representative of the Division of Health visited hospitals in the state suggesting that this procedure be initiated in the laboratories of the hospitals. Of the 168 institutions in the state with facilities adequate for the program, only five hospitals arranged to do the test on their own. All five of these were located in Kansas City or St. Louis.

Early in 1964, it came to the attention of the Division of Health that proposed legislation would be introduced in the 73rd General Assembly to make physicians responsible under a program of mandatory PKU testing. In an effort to avoid such a development, the Division of Health again surveyed the hospitals of the state, this time offering its laboratory facilities to all hospitals which would screen all newborn for phenylketonuria.

Last September the PKU screening program was begun on a voluntary basis. At that time the hope was expressed that as soon as possible the test procedure would be done in private facilities, thus relieving the Division of Health of the responsibility. At present, the PKU testing program has enrolled 133 hospitals. Only ten of this number are using their own facilities.

As anticipated, the legislation to make PKU testing mandatory (H.B. 55) was introduced when the new General Assembly convened. The bill has been approved by the House and at this writing is being considered by a Senate committee. It appears certain to become law in some form. A representative of the Division of Health appeared at hearings on the measure by committees of both the House and Senate, opposing the mandatory provisions of the Bill and its arbitrary assignment of responsibility to the physician. Representatives of MSMA have offered amendments to the Bill in an effort to make it more palatable to the profession.

We have reviewed the PKU testing program in detail because its history illustrates a unique characteristic of the Missouri Division of Health that is too seldom appreciated. We are one of the few health departments in the United States which are willing to jeopardize their political security in an attempt to cooperate with organized medicine and its specialty groups. Generally, the results have been worth the risks, and no change in this approach is intended or desired.

The Division of Health will continue to cooperate with organized medicine, but only when its first duty is not compromised—to protect and promote the health of the citizens of Missouri.

Sincerely,

H. M. HARDWICKE, M.D.
Acting Director
Division of Health

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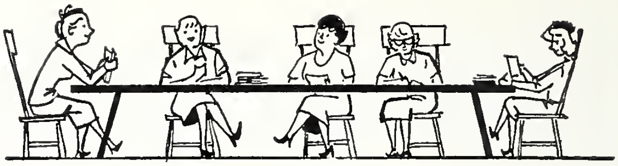
Woman's Auxiliary



Greetings! I wish I might write this article *after* Convention instead of *before*—for two reasons: (1) lack of time now when I am so busy and (2) so I could give you glowing reports of our annual meeting! Of course, I hope you will be attending so that I won't *have* to tell you about it! First-hand information is much better than second-hand!

Mrs. R. W. Bohnsack

I'm sure by the time you read this that you will be home again from St. Louis, inspired with the words of our National President, Mrs. William H. Evans, our National President-Elect, Mrs. Richard A. Sutter, and Mrs. Jordan Kelling, who is now President of Southern. I hope you're inspired, too, by the friendly smiles and faces of the doctors' wives from all over the state.

Today I have just received a new Manual of Procedure from Jane Crispell who has been working on this for many months. If the President can *read,* she should have no problems from now on! A big orchid for Jane who toiled many, many hours to do this job for me and for future Presidents of the Auxiliary.

I'm sure we will need to give orchids to members of the St. Louis County Auxiliary, who did such a magnificent job with our Convention. They were aided by the Lincoln-St. Charles group in various ways, and they all worked tirelessly and lovingly under the able direction of Venus Schattyn and Mil Diehr as Co-Chairmen, and Jean Cowdry as President, to make this a Convention long to be remembered! Thank you all so much!

Now we must get busy making plans for the National Convention to be held at the Americana Hotel in New York City, June 20-24. We hope to have a lovely reception for Betty Sutter after her installation as National President to show her how proud we are of her. We know we'll have a wonderful year ahead with her at the helm. I do hope many, many of you are planning to attend and have your reservations already made!

As I begin another year as your President (this year OFFICIALLY), I am full of deep gratitude for the kindness and consideration of all of you during the past trying eight months. I also am full of determination to try to serve this year to the best of my ability, to accomplish many things and to be as helpful to YOU as you have been to ME. I hope to get to visit more of the auxiliaries this year and to get to know each one of you better.

I am hoping we can increase our membership, to close the large gap existing between the membership of the Medical Association and that of the Auxiliary. Each one of you as helpmates of your husbands should *want* to be an Auxiliary member, and each of you doctors should *want* your wife to belong to this organization. We can all work together toward "BETTER HEALTH —BETTER WORLD!"

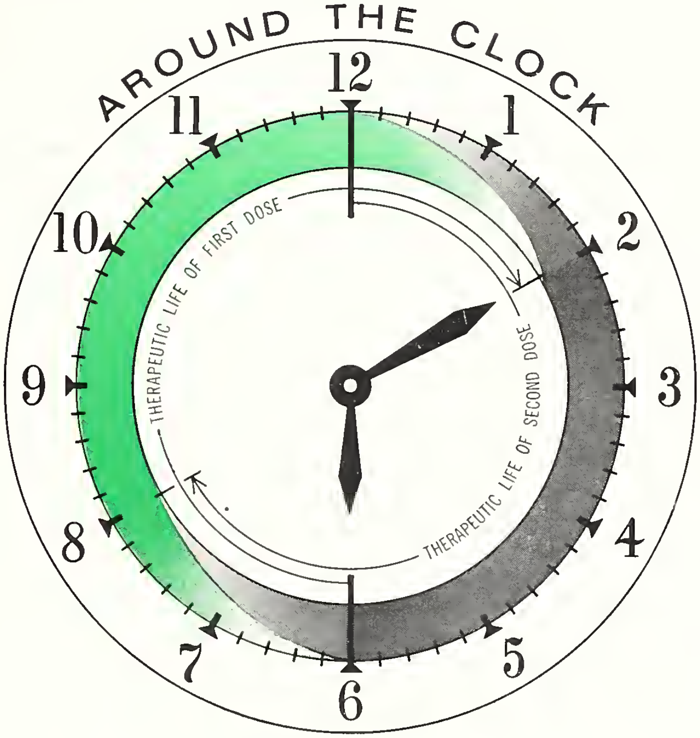
We greatly appreciate the invitation of the Butler-Ripley-Wayne Auxiliary to hold our Fall Conference at the Holiday Inn at Poplar Bluff in October. This will be a fine opportunity to get to know these people better and to see some beautiful parts of Missouri which I, for one, have not yet seen! Thank you, Butler-Ripley-Wayne, and the other auxiliaries of the Tenth District who will assist.

If you county auxiliaries have not yet sent me your lists of new officers and committees, please do so at once. I need them desperately for the Roster, stationery, etc.

I don't know what the status of the Medicare or Eldercare bills will be, by the time you read this. The House Ways and Means Committee has been voting on the various provisions of a 296 page proposal which has been characterized as a "3-layer cake"! It will be interesting to see who eats what!

Congratulations to the new officers, directors, committee chairmen—and county presidents as we begin a new year in Auxiliary together. And a word of commendation to those who have just finished a successful year in office! May we all begin the new year with enthusiasm and willingness to serve each other, our doctors and our National Auxiliary. Best wishes to all of you for a wonderful year ahead!

MILD, CONTINUOUS SEDATION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12
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**See white section, P.D.R.*

County Society News

FIRST DISTRICT

COUNCILOR
JOSEPH FISHER, M.D., ST. JOSEPH

Grand River Medical Society

Members of the Grand River Medical Society and Auxiliary held their regular monthly dinner meeting in Chillicothe on March 11. There were 26 members and guests present.

Dr. Donald Dowell of Chillicothe gave a very interesting discussion of the World Health Organization for the Auxiliary.

The Society's scientific program consisted of a very informative and practical discussion of the differential diagnosis and treatment of "The Acute Red Eye" by Dr. Michael Dietz of Kansas City, Kansas.

At the business meeting it was decided to hold the April meeting at the regular time, April 8, despite this being the day following the MSMA convention. Dr. George Mandler, president, presided over a discussion of the topics to be introduced at the MSMA convention, and all members were urged to attend.

Albert D. Cross, M.D., *Secretary*

Buchanan County Medical Society

One hundred forty-five physicians, auxiliary members and guests attended the combined Society and Auxiliary meeting on March 10 in St. Joseph. Guests included a wide cross section of community leaders from service clubs, hospital administrators, labor leaders, professional groups, welfare organizations and educators. Speaker was Mrs. Aaron Margules, field representative of the AMA in charge of women's organizations, who discussed the work of the AMA and also reported on Eldercare and Medicare legislation. Considerable interest was evidenced in a question and answer session following Mrs. Margules' talk. Mrs. Margules also addressed a combined meeting of all the city's Medical Career Clubs, sponsored by the Auxiliary in the different high schools, and was interviewed on television. Unusual coverage of the programs was given by the local press, radio and TV stations. Presiding jointly at the Society-Auxiliary dinner were the two presidents, Dr. Herbert C. Senne and Mrs. E. F. Butler. Mrs. Charles R. Willman and Mrs. Herbert A. Curran were co-chairmen of arrangements for the Auxiliary and Dr. Joe S. Gunter, Chairman of the society program committee.

Berwyn H. Moen, M.D., *Secretary*

SECOND DISTRICT

COUNCILOR
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

A dinner meeting was held at the Woodland Hospital in Moberly on Thursday night, March 11. The featured speaker for the evening was Leonard T. Furlow, M.D., St. Louis, President of the MSMA. In his remarks Dr. Furlow discussed a number of items which pose problems for county medical societies as well as for the State Medical Association. He pointed out that a number of these matters would come before the House of Delegates at the April 4-7 Annual Session of the MSMA. He also explained some of the bills now pending in the state legislature which are of direct concern to the medical profession and the health care of the people in this state. He also discussed "Medicare or Eldercare," pointing out that the relative merits of these programs are well known to the medical profession but not to the general public and that only by informing the public can the Congress be influenced to take the proper course of action.

In his concluding remarks Dr. Furlow urged that as many members as possible of the Society attend the coming Annual Meeting of the State Association in St. Louis.

Robert Hasson, M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR
PAUL H. ROTHER, ST. CHARLES

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society and the doctors' wives was held at the Golfview Inn in St. Charles March 23. The evening festivities began with a social hour followed by dinner and the program. The ladies retired after dinner to a separate meeting. The Medical Society program was strictly a business session with the discussion centered primarily on important matters coming

One antibiotic superior to
Tetracycline
Chloramphenicol
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Polymyxin B
Penicillin G
against Proteus mirabilis and E. coli

Proteus mirabilis is not only the most common cause of *Proteus* infections of the urinary tract, but such infections are often resistant to other antibiotics.[1-4] According to Anderson *et al.*,[5] "When assessed in terms of serum levels attainable with usual dosage regimens, ampicillin was the most effective drug tested against *E. coli* and *P. mirabilis.*" These authors found *Klebsiella-Aerobacter* and *Pseudomonas* organisms relatively insusceptible to ampicillin. With its broad-spectrum coverage of many gram-positive and gram-negative bacteria, absence of toxicity, and slow emergence of resistant strains, PENBRITIN (ampicillin) is a most beneficial and safe drug in treating urinary tract infections—*killing* the pathogens, not just suppressing them.

Dosage: Adults—500 mg. every six hours (higher doses may be required for severe infections). Children—(under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms. *Aerobacter aerogenes, Pseudomonas pyocyanea,* and *Proteus morganii* are resistant to PENBRITIN (ampicillin).

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting, have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606—Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Hanson, R. J., *et al.*: J. Urol. *79*:1016 (July) 1958. 2. Middletown, J. E.: Brit. M. J. *ii*:497 (Aug. 31) 1957. 3. Today's Drugs, Brit. M. J. *i*:1475 (May 26) 1962. 4. Brumfitt, W., *et al.*: Lancet *i*:130 (Jan. 20) 1962. 5. Anderson, K. N., *et al.*: J.A.M.A. *187*:87 (Feb. 22) 1964.

Kills bacteria—does not just suppress them

PENBRITIN®

Brand of Ampicillin

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before the House of Delegates at the MSMA Annual Meeting, in St. Louis.

Dr. Paul Whitener, President-Elect of the MSMA, was a special guest and took part in the deliberations of the business session.

Gerald Yaeger, M.D., *Secretary*

SIXTH DISTRICT

COUNCILOR
ROLLA B. WRAY, M.D., NEVADA

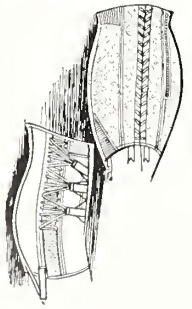
West Central Missouri Medical Society

The West Central Missouri Medical Society met in El Dorado Springs, Thursday evening, March 11. Total attendance, doctors, wives, and guests, was 16. There was a social hour followed by dinner and then the regular meeting of the Society was called to order by the President, Dr. W. S. Love.

The scientific portion of the meeting was a presentation by Dr. David Hall, Department of Ob-Gyn, University of Missouri Medical Center. Dr. Hall gave a most interesting and instructive talk on "Cervical Cancer." This presentation had the additional merit of being extremely practical.

Following the scientific meeting the business meeting of the Society was held. Minutes of the February meeting were read and approved. The Secretary reported on the correspondence received and acted upon since the last meeting of the Society. There were no committee reports. The Secretary announced that there will be no meeting of the Society in April because of conflict of the annual meeting of the MSMA. The May meeting of the Society will be held in Nevada, Mo., and a meeting with the area dentists on the subject of "maxillo-facial injuries" is being planned.

Roy W. Pearse, Jr., M.D., *Secretary*



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Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
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Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Swartz, C., et al.: Circulation 28:1042, 1963.

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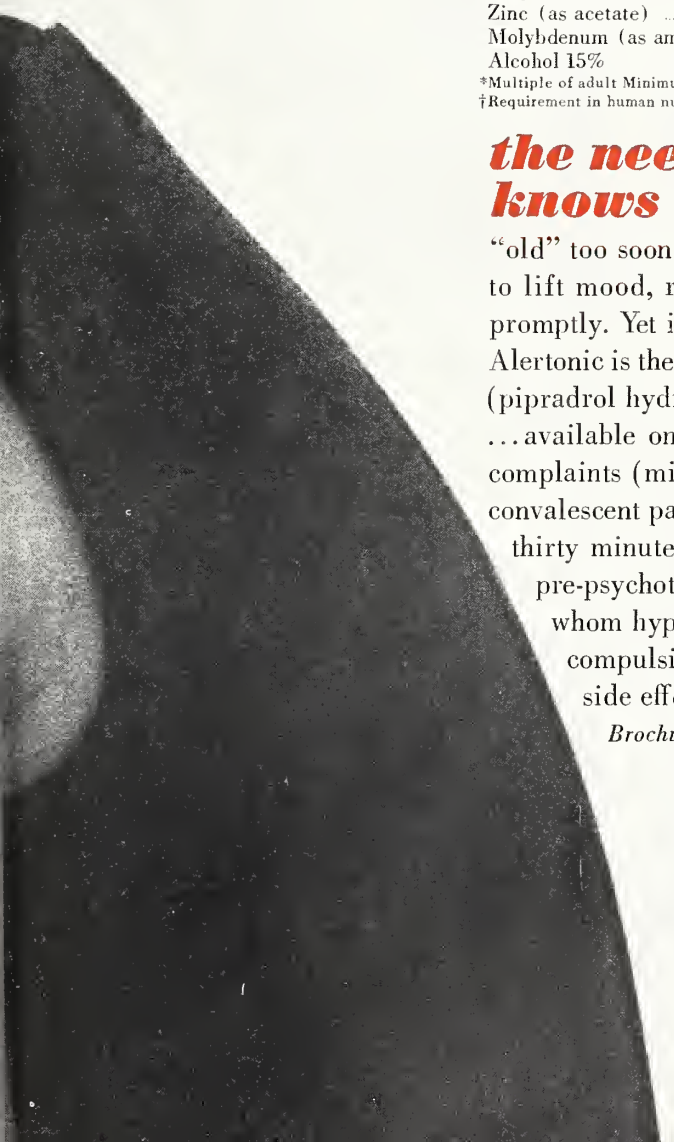

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Nicotinamide	(5 MDR*)	50 mg.
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New Members

P. Alonso-Yague, M.D., 5400 Arsenal St., St. Louis, has become a member of St. Louis Medical Society. Dr. Alonso-Yague is a native of Teruek, Spain, received his preliminary education at Escuelas Pias San Anton, Madrid, and his M.D. degree at the University of Madrid in 1953. He specializes in internal medicine.

Joseph J. Combs, M.D., 101 Shady Valley Dr., Chesterfield, has become a member of St. Louis County Medical Society. Dr. Combs is a native of Norfolk, Virginia, received his preliminary education at the University of North Carolina, and his M.D. degree at Duke University in 1955. He specializes in internal medicine.

Robert F. Dettmer, M.D., Ironton, has become a member of Mineral Area County Medical Society. Dr. Dettmer is a native of Pilot Knob, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1961. He specializes in general practice.

John C. Goldner, M.D., 807 Stadium Rd., Columbia, has became a member of Boone County Medical Society. Dr. Goldner is a native of New Orleans, Louisiana, received his preliminary education at the University of Nebraska, and his M.D. degree at the University of Nebraska in 1963. He specializes in community health.

Stanton L. Hardy, M.D., Desloge, has become a member of Mineral Area County Medical Society. Dr. Hardy is a native of Elvins, Missouri, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1960. He specializes in general practice.

J. Larry Harwell, M.D., 6914 Kingsbury, St. Louis, has become a member of St. Louis County Medical Society. Dr. Harwell is a native of Poplar Bluff, Missouri, received his preliminary education at Washington University, and his M.D. degree at the University of Missouri in 1961. He specializes in pediatrics.

G. Elden Lucas, M.D., 6420 Clayton Rd., St. Louis, has become a member of St. Louis Medical Society. Dr. Lucas is a native of E. Cleveland, Ohio, received his preliminary education at John Carroll University, and his M.D. degree at St. Louis University in 1958. He specializes in anesthesiology.

Philip J. Marco, M.D., 807 Stadium Rd., Columbia, has become a member of Boone County Medical Society. Dr. Marco is a native of Boston, Massachusetts, received his preliminary education at Boston College, and his M.D. degree at Middlesex University in 1943. He specializes in psychiatry.

Sue Marten, M.D., Viburnum, has become a member of Mineral Area County Medical Society. Dr. Marten is a native of San Diego, California, received her preliminary education at the University of Missouri, and her M.D. degree at the University of Missouri in 1962. She specializes in general practice.

Jay Meyer, M.D., 8748 Rankin, St. Louis, has become a member of St. Louis County Medical Society. Dr. Meyer is a native of St. Louis, Missouri, received his preliminary education at Washington University, and his M.D. degree as St. Louis University in 1960. He specializes in psychiatry.

Girgis Mikhail, M.D., 640 S. Kingshighway, St. Louis, has become a member of St. Louis Medical Society. Dr. Mikhail is a native of Atbara, Sudan, received his preliminary education at Primary and Secondary Schools in Sudan, and his M.D. degree at Alexandria University in 1955. He specializes in obstetrics and gynecology.

John L. Moore, M.D., 23 Orchard Lane, St. Louis, has become a member of St. Louis County Medical Society. Dr. Moore is a native of Lynn, Massachusetts, received his preliminary education at Bates College, and his M.D. degree at College of Physicians and Surgeons in 1956. He specializes in aviation medicine.

Henry M. Parrish, M.D., 807 Stadium Rd., Columbia, has become a member of Boone County Medical Society. Dr. Parrish is a native of Ocala, Florida, received his preliminary education at Wake Forest College, and his M.D. degree at the University of Pennsylvania in 1953. He specializes in preventative medicine.

William F. Patient, M.D., 4644 Redfield Ct., St. Louis, has become a member of St. Louis County Medical Society. Dr. Patient is a native of Belleville, Illinois, received his preliminary education at St. Louis University, and his M.D. degree at St. Louis University in 1933. He specializes in aviation medicine.

James E. Vester, M.D., Bismarck, has become a member of Mineral Area County Medical Society. Dr. Vester is a native of St. Louis, Missouri, received his preliminary education at Washington University, and his M.D. degree at Washington University in 1951. He specializes in general practice.

Edward T. Zukowski, M.D., 7355 Yates St., St. Louis, has become a member of St. Louis Medical Society. Dr. Zukowski is a native of Benton, Illinois, received his preliminary education at the University of Illinois, and his M.D. degree at the University of Illinois in 1959. He specializes in radiology.

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JOHN CROWE, M.D., Secretary

Missouri Academy of General Practice

On Sunday, May 2, the St. Louis Academy of General Practice will held its tenth annual Spring Scientific Symposium in the auditorium of the St. Louis Medical Society Building, 3839 Lindell Blvd., St. Louis. Doctors and their wives from over Missouri are invited to attend. Registration starts at 1:00 p.m.

During the afternoon there will be talks on: "Care, Treatment, Education and Rehabilitation of the Mentally Retarded," by Leopold Hofstatter, M.D., Superintendent of St. Louis State School and Hospital; "No Nonsense in Baby Raising," by Walter W. Sackett, M.D., President of the Florida Academy of General Practice; and "Common Foot Disorders in Childhood," by Carl M. Fellhauer, senior instructor in Orthopedic Surgery at St. Louis University. The final address of the afternoon will be given by Missouri Congressman from the Second District, the Honorable Thomas B. Curtis, who will discuss "Eldercare, Medicare or Gericare???" Mr. Curtis is cosponsor and author of the Curtis-Herlong Bill now before Congress.

After a cocktail hour and steak dinner, H. M. Hardwicke, M.D., acting director of the Division of Health, will speak on "The Shape of Medicine Tomorrow." Dr. Hardwicke is a well-known speaker of outstanding ability. The cost for the entire day, lectures, cokes, cocktails and dinner is only $5.00.

On Thursday, May 6, the Public and Professional Relations Committee of the MAGP and the Rural Health Committee of the MSMA will cosponsor a luncheon meeting for the junior class of the University of Missouri Medical School. This luncheon will be held on the first day of the Annual Spring Clinical Conference at the University Medical Center. The luncheon program will feature discussions on general practice under three situations, solo, partnership and small group practice. B. J. Bass, M.D., Salem, will discuss solo practice; Charles Worley, M.D., Sweet Springs, partnership practice; and A. E. Spelman, M.D., Smithville, small group practice. Following these presentations Doyle McCraw, M.D., Bolivar, President, MAGP, will discuss the objectives and some of the programs of the Academy and Paul Whitener, M.D., St. Louis, President of MSMA, will discuss the county medical society, the state medical association and the AMA. Following the formal presentations there will be a period for questions and general discussion.

On Wednesday night, May 5, there will be a meeting of the Board of Directors of the MAGP at the Daniel Boone Hotel in Columbia.

In Memoriam

Carney, Roscoe P., M.D., St. Louis, a graduate of St. Louis University, 1943; member of St. Louis Medical Society; aged 47; died February 6, 1965.

Dieckman, William C., M.D., Dexter, a graduate of St. Louis College of Physicians, 1901; member of Semo County Medical Society; aged 89; died February 15, 1965.

Dyer, David P., M.D., Sedalia, a graduate of Barnes Medical College, 1904; member of Pettis County Medical Society; aged 86; died February 16, 1965.

Keller, Joseph M., M.D., St. Louis, a graduate of St. Louis University, 1908; member of St. Louis Medical Society; aged 84; died February 27, 1965.

Wright, John L., M.D., Poplar Bluff, a graduate of the University of Arkansas, 1955; member of Butler-Wayne-Ripley County Medical Society; aged 33; died March 10, 1965.

effects and precautions: The transitory
/siness which may occur with hydroxyzine
usually disappears spontaneously in a few
with continued therapy, or is correctable
osage reduction. Dryness of the mouth may
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ity has been reported in hospitalized
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oxyzine HCl may potentiate CNS depres-
s, narcotics such as meperidine, barbitu-
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ge for these drugs should be decreased.
use drowsiness may occur, patients should
autioned against driving a car or operat-
dangerous machinery. **Parenteral Solution
autions and contraindications:** This dosage
is intended only for I.M. or I.V. adminis-
on and should not, under any circum-
ces, be injected subcutaneously or intra-
ially. When the usual precautions for I.M.
tion have been followed, reports of soft
e reactions have been rare. I.V. adminis-
on should be slow, no faster than 25 mg.
minute, and should not exceed 100 mg. in
single dose. Particular care should be used
sure injection only into intact veins; a few
nces of digital gangrene occurring distal
e injection site have been attributed to
vertent intraarterial injection or periarte-
extravasation, both of which should be
ded. **More detailed professional informa-
available on request.**

From the Medical Schools

WASHINGTON UNIVERSITY

Dr. M. Kenton King has been named dean of Washington University School of Medicine, St. Louis. The appointment was made effective on March 12. Dr. King was named acting dean of the school in September when Dr. Edward Dempsey, who had been dean for six years, resigned and took a leave of absence as professor of anatomy to become special assistant to Secretary of Health, Education, and Welfare Anthony Celebrezze. Dr. King has served as associate dean since 1962.

Dr. King joined the faculty of Washington University School of Medicine in 1957 and served as director of the Student Health Service from 1957 to 1962. He now holds the titles of associate professor of preventive medicine and medicine.

Dr. John C. Herweg, associate professor of pediatrics, has been named associate dean of the School of Medicine with responsibility for student affairs. Dr. Herweg received his M.D. degree from Washington University and his B.S. from Drury College. He has been a faculty member since 1951, with the exception of two years as post-doctoral fellow and assistant professor of microbiology at the University of Minnesota School of Medicine.

At Washington University he has served as assistant dean for postgraduate education and is currently assistant director of the Clinical Research Unit. He is assistant physician at St. Louis Children's Hospital, where he maintains a laboratory for research in virology.

Barnard Free Skin and Cancer Hospital has accepted a $290,000 grant from the U. S. Public Health Service which will provide for construction of two additional floors to the 5-story building. The grant will provide approximately half the funds for the addition. Barnard Hospital will supply $190,000 in matching funds.

The new sixth floor will provide laboratories

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From the Medical Schools (cont'd.)

for the division of radiation biophysics and the tumor registry. The seventh floor will house quarters for 50 large and a variety of small animals. Construction of the addition is anticipated to begin in the fall with occupancy slated for late 1966.

UNIVERSITY OF MISSOURI

Dr. Benedict J. Campbell, associate professor of Biochemistry, attended the 19th Annual Protein Conference at State University of Rutgers, New Brunswick, New Jersey, on February 1 through 5.

Dr. Thomas D. Luckey, professor and chairman of the Department of Biochemistry at the Medical Center, attended a Symposium on Unmanned Exploration of the Solar System in Denver and was one of a group that represented the University of Missouri at the NASA-University Program Review Conference held in Kansas City.

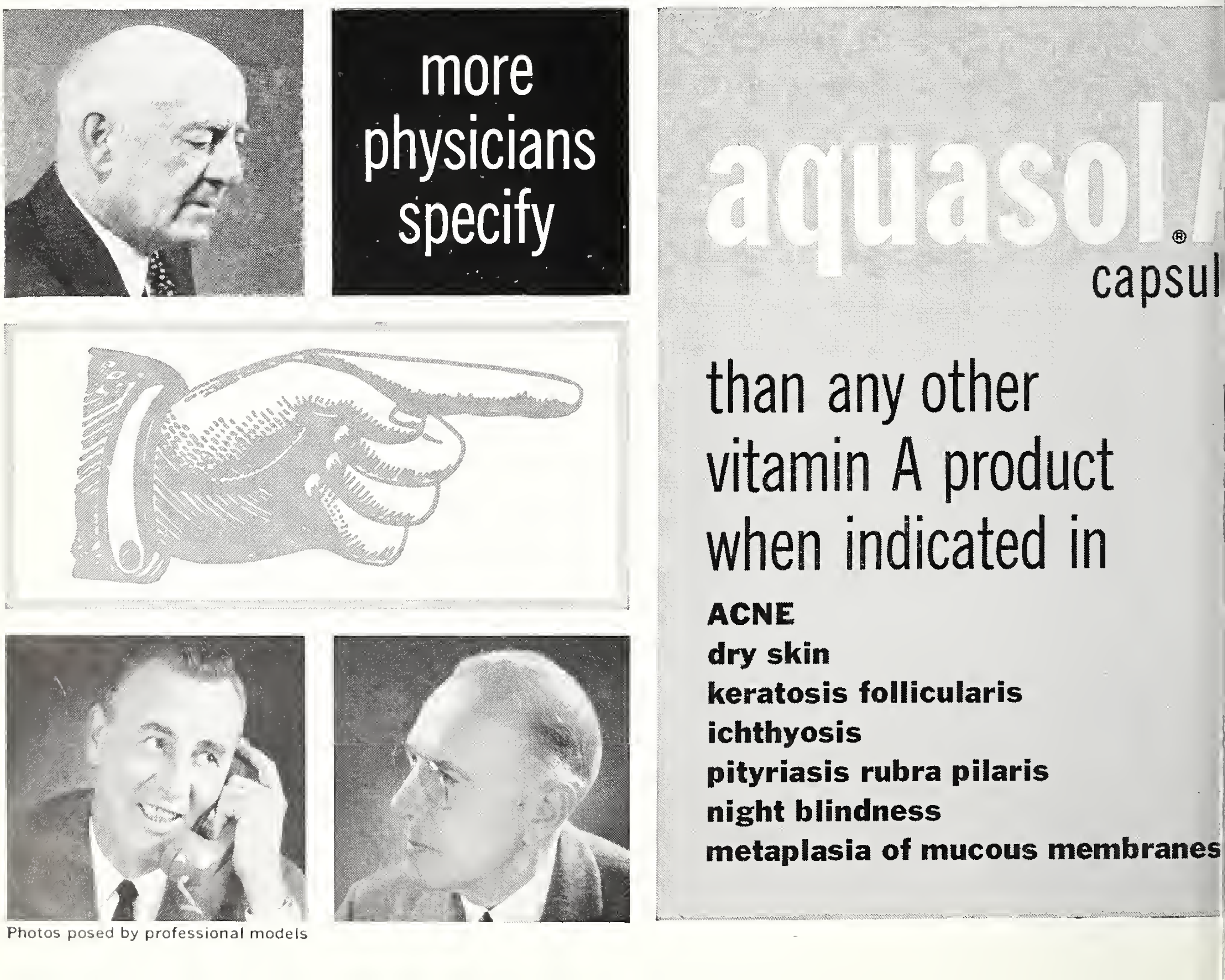
Dr. Henry M. Parrish, associate professor and chairman of the Department of Community Health and Medical Practice, has been elected a Fellow of the American Association for the Advancement of Science.

ST. LOUIS UNIVERSITY

A portrait of Dr. G. O. Broun, Sr., dean emeritus, St. Louis University School of Medicine, was unveiled and presented to St. Louis University by Dr. R. Emmet Kelly, president, Medical Alumni Association at a ceremony held March 19.

The Very Rev. Paul C. Reinert, S.J., University President accepted the portrait for the University. A gift of medical school alumni, the portrait was painted by Mrs. Dorothy Quest, a St. Louis artist. It can be viewed in the corridor outside the administrative offices at the School of Medicine.

The United States Public Health Service has awarded the School of Medicine continuation and new research and training grants within recent months totaling $1,335,978. Research grants awarded the School totaled $918,484 while U.S.P.H.S. training grants were in the amount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night blindness
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Photos posed by professional models

Dr. R. Emmet Kelly, president, St. Louis University Medical Alumni Association, unveils portrait of Dr. G. O. Broun, Sr., dean emeritus, School of Medicine at recent ceremony at School of Medicine. (L. to r.) The Very Rev. Paul C. Reinert, S.J., University president; Dr. Broun and Dr. Kelly.

of $417,494. An award of $111,298 under the direction of Dr. Robert H. Felix, dean, School of Medicine, supports a general research program at the School of Medicine.

Largest training grant of $112,000 went to Dr. Edward A. Doisy, Sr., director, Edward A. Doisy Department of Biochemistry, for the expansion of postgraduate study in the field of biochemistry. Newest training grants were in the area of psychiatry under the direction of Dr. Edward T. Auer, director, Department of Neurology and Psychiatry and David P. Wohl Memorial Mental Health Institute.

Even in the absence of formal experimentation, every doctor who gives a drug, prescribes a procedure or diet for his patient is engaged in an experiment for he observes the result, modifies the dose or procedure as needed, each patient being a unique individual, whose responses will vary from every other patient. Not less research but more research is needed on the most important of all animals—man.—Louis H. Nahum, M.D., in *Connecticut Medicine,* 29:2, (Feb.) 1965.

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may reach affected local area more readily through . . .
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le physiologically active isomers of the natural
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oved and free from "fishy" taste, Aquasol A is . . .
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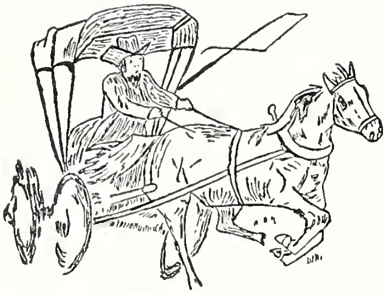

FORTY YEARS AGO

Russell L. Haden, M.D., publishes case reports illustrating the relationship between dental infection and systemic disease, May, 1925.—At the annual meeting of the Federation of State Medical Boards of the United States held at Chicago, Dr. F. C. Waite, of Cleveland, Fellow of the Federation, presented an interesting account of the campaign now being carried on by the Missouri State Board of Health to bring about an improvement in licensure conditions in that state.—The authorities of Cornell University have made a requirement that all students admitted to the university, beginning with the fall of 1925, must be vaccinated against smallpox.—Dr. Richard L. Sutton, of Kansas City, has been made a Fellow of the Royal Society of Edinburgh. Dr. Sutton was given the honorary degree of Doctor of Laws by the University of Missouri in 1922 and recently headed a scientific expedition to Africa under the auspices of the Department of Natural History of that institution.

TWENTY-FIVE YEARS AGO

Dr. James R. L. Womack, Houston, in practice in Texas County for 46 years, received much acclaim when on December 28 he canceled all professional bills due him, according to an article from the Springfield *News-Leader* of February 11. Dr. Womack terms himself a saddlebag doctor rather than a horse and buggy doctor. He is 76 years old. He has been a member of the legislature and has been coroner for several years. He is continuing his practice of medicine.

The American Physicians' Art Association composed of more than 800 physicians in the United States, Canada and Hawaii who follow some form of fine and applied art as an avocation will hold its annual art show at the Belmont-Plaza Hotel, New York City, June 10 to 14, at the time of the American Medical Association Session.

The Cooper County Medical Society met at St. Joseph's Hospital, Boonville, March 27. The following officers were elected: President, Dr. G. L. Chamberlain, New Franklin; vice-president, Dr. C. H. VanRavenswaay, Boonville; secretary, Dr. J. C. Tincher, Boonville; delegate, Dr. W. H. Ziegler, Boonville, alternate, Dr. Arie C. VanRavenswaay, Boonville.

TEN YEARS AGO

Dr. Charles B. Huggins, professor of surgical urology at the University of Chicago School of Medicine delivered the tenth annual Hanau W. Loeb Lecture at Saint Louis University School of Medicine, February 24. The Lectureship is sponsored by the Phi Delta Epsilon Medical Fraternity of Saint Louis University, and was established in 1946 in honor of the late Dr. Hanau W. Loeb, who served as dean of the School of Medicine from 1914 to 1927.

Appointments: Dr. Thomas H. Alphin, formerly Assistant Director, Washington Office, American Medical Association, assumed his duties as Associate Professor of Anatomy and Assistant Dean of the University of Missouri School of Medicine. Dr. William T. Ellis, currently in his fifth postgraduate year of Obstetrics and Gynecology, Boston City Hospital, assumed his duties as Assistant Professor of Obstetrics and Gynecology.

Dr. Wilder Penfield, the leading authority in the surgical treatment of epilepsy, was in St. Louis February 8 at the institution of the St. Louis Society of Neurology and Psychiatry. He discussed "Cerebral Pathology and Epileptic Seizures" at a meeting of the Society.

The first Missouri regional meeting of the American College of Physicians was held February 19 at the University of Missouri in Columbia. Dr. William A. Sodeman, professor of medicine at the University of Missouri and general chairman for the meeting, presided at the morning session. Presiding at the afternoon session was Dr. Carl V. Moore, dean of Washington University School of Medicine and governor of Missouri for the American College of Physicians.

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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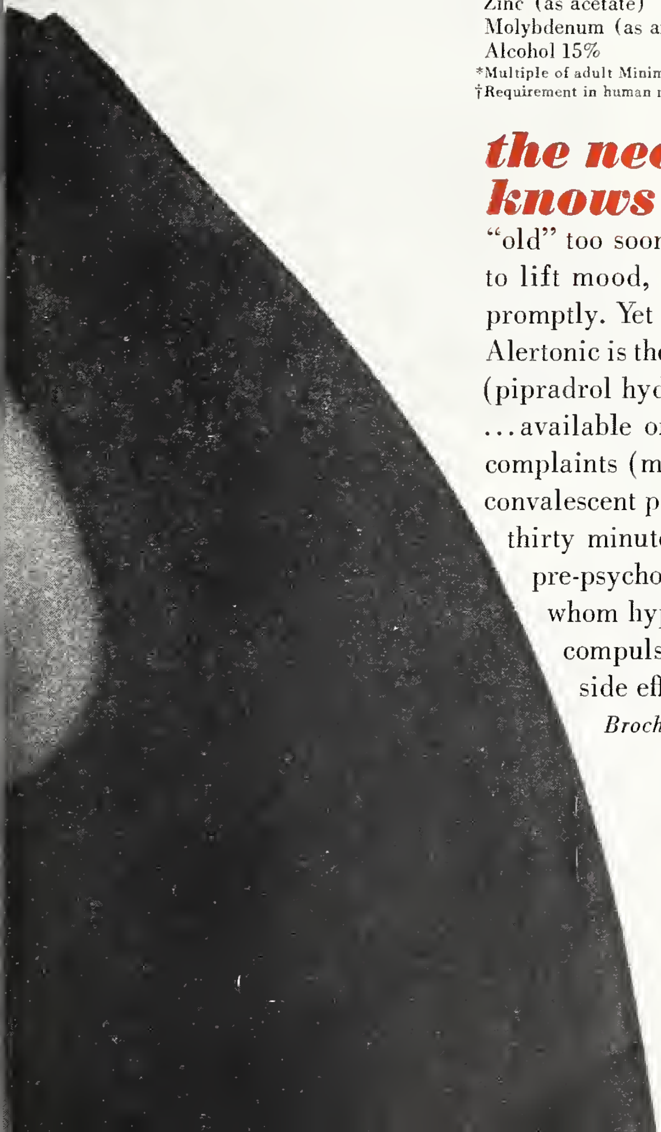

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MSMA Elects Stuart as Next President

The 107th Annual Session of the Missouri State Medical Association was held April 4, 5, 6 and 7 at the Chase-Park Plaza Hotel in St. Louis with 1,302 persons taking part in the various events and programs. Included in the total registration figure were 547 members of MSMA, 35 guest physicians and 184 members of the Woman's Auxiliary.

The House of Delegates of MSMA held three sessions during the convention, discussing various Association problems and outlining policies and programs for the coming year. At the final meeting of the House, Byron M. Stuart, M.D., of Boonville was named President-Elect of the Association. Doctor Stuart graduated from the University of Louisville Medical School in 1941 and served his internship and residency at Charity Hospital in New Orleans. He is an internist, past President of the Cooper County Medical Society, a former Vice-President of MSMA, member of the Association's Council for the past nine years and the Council chairman since 1963.

The House also elected the following officers:

Charles S. Sherwin, M.D., St. Louis, Vice-President

Roy W. Pearse, M.D., Nevada, Vice-President

Harold W. Miller, M.D., Willow Springs, Vice-President

Stanley Peterson, M.D., Springfield, Speaker (second term).

Paul F. Max, M.D., St. Louis, Vice-Speaker (second term)

Two delegates and two alternate delegates to the AMA whose terms of office had expired were re-elected. They are: delegates A. W. Neilson, M.D., St. Louis and Richard H. Kiene, M.D., Kansas City; alternate delegates Robert Kelley, M.D., St. Louis and Hugh Stephenson, Jr., M.D., Columbia.

Six MSMA Districts elected or re-elected representatives to serve on the Association Council during the next year. They are:

Lysle M. Bach, M.D., Hannibal, Dist. 2

Robert A. Mayer, M.D., St. Louis County, Dist. 4

James C. Cope, M.D., Columbia, Dist. 5

Rolla B. Wray, M.D., Nevada, Dist. 6

Doyle C. McCraw, M.D., Bolivar, Dist. 8

W. D. English, M.D., Cardwell, Dist. 10

The Council, meeting after the final session of the House, completed its annual reorganization by electing: Hector W. Benoit, M.D., Kansas City, as Chairman; David N. Kerr, M.D., St. Louis, Vice-Chairman; John I. Matthews, M.D., Jefferson City, MSMA Secretary; and Walter T. Gunn, M.D., St. Louis, MSMA Treasurer.

The House took action on several matters affecting the operations of the Association and the practice of medicine in Missouri. A resolution providing more definite guidelines for M.D.-D.O. relations was approved. The Council was instructed to continue its study and evaluation of the proper location for the state office. The special $7.50 assessment for the Missouri State Medical Foundation was continued for another three years. A plan for establishing adjudication or grievance committees within the Councilor District was approved.

Byron M. Stuart, M.D., of Boonville, the new President-Elect of MSMA.

The House also voted full Association support to the campaign for Durward Hall, M.D., Springfield, as a candidate for President-Elect of the AMA.

Paul R. Whitener, M.D., St. Louis County, was formally installed as the new President of the Association, succeeding Leonard T. Furlow, M.D., St. Louis.

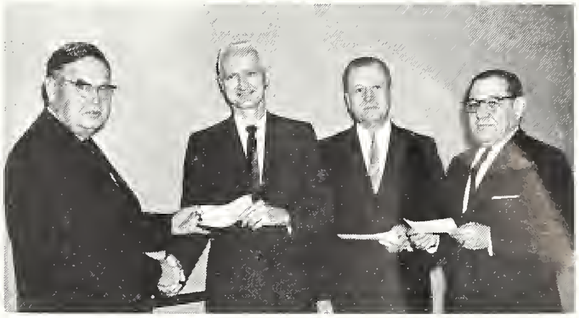
The full and official report of the 1965 Annual Session of MSMA will be published in the July issue.

State Med Schools Benefit From AMA-ERF Grants

Checks totaling nearly $45,000 were presented recently to Missouri's three medical schools by the American Medical Association Education and Research Foundation (AMA-ERF).

Paul R. Whitener, M.D., St. Louis, president of the Missouri State Medical Association, presented the grants to the deans of the schools. Vernon E. Wilson, M.D., dean of the University of Missouri School of Medicine received $6,415.09; Robert H. Felix, M.D., dean of the St. Louis University School of Medicine, received $19,404.70; and John C. Herweg, M.D., associate dean of the School of Medicine of Washington University, representing Dean M. Kenton King, M.D., received $18,739.70.

The grants were made from a total of $1,313,559.31 contributed in 1964 to the AMA-ERF Fund for Medical Schools by physicians, their families and allied groups. This amount represents an increase of more than $100,000 over the previous year. Deans of recipient schools may use the grants at their discretion for special projects or expenses outside their budgets.



MSMA President Paul R. Whitener, M.D., presents AMA-ERF grant checks to representatives of Missouri's three medical schools. (l to r) Doctor Whitener; Vernon E. Wilson, M.D., dean of M.U. School of Medicine; John C. Herweg, M.D., associate dean of Washington U. School of Medicine; and Robert H. Felix, M.D., dean of St. Louis U. School of Medicine.

The AMA-ERF program was established by the American Medical Association in 1951 to enable physicians to play a greater part in the financial support of the nation's medical schools. Administrative costs of the fund-raising program are borne by the AMA and its constituent societies, and none of the contributed money is used for collection and distribution expense. Since its foundation, AMA-ERF has distributed more than $15 million to schools of medicine.

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Full Program Planned For 1965 AMA Meet

The Council on Postgraduate Programs of the American Medical Association has announced that the program for the 114th annual convention in New York City June 20-24, 1965, is virtually complete. An attendance of between 25,000 and 30,000 physicians is anticipated. When the AMA held its last convention in New York City in 1961, the total physician registration was 23,083.

J. Arnold Bargen, M.D., Temple, Tex., chairman of the Council on Postgraduate Programs, which plans the scientific programs for the AMA's two conventions each year, said that the 1965 program will be most comprehensive, including lectures, scientific exhibits, preview showings of medical films and color television. "The combined efforts of many people, particularly the specialty section secretaries, have helped to formulate a program that will be an outstanding contribution to graduate medical education," Dr. Bargen said.

There will be six general scientific meetings offering physicians the most recent findings in adverse drug reactions, organ transplantation, hearing, non-narcotic drug addiction, metabolism in growth development and aging, and diagnostic cytology. The convention will center in the Coliseum at Columbus Circle, adjoining Central Park, which also housed the 1961 annual convention. Even this huge building cannot contain all of the scientific meetings, and some will overflow into hotels in the mid-town area.

The complete program of the convention was published in the May 10 issue of the *Journal of the AMA*.

Rep. Catherine May (R-Wash.) and Harold Russell, chairman of the President's Committee on the Employment of Handicapped, will be the featured speakers at the annual convention of the Woman's Auxiliary to the AMA. More than 2,000 doctors' wives are expected to attend the meeting at the Americana Hotel, according to Auxiliary President, Mrs. William H. Evans, Youngstown, Ohio.

Mrs. Evans and Mrs. Richard A. Sutter, St. Louis, Mo., the president-elect, will be honored at a tea and fashion show Sunday, June 20. Miss Eleanor Lambert, director of the Ten Best Dressed American Women Awards, will be the commentator.

Mrs. Sutter will be installed as president at the concluding business session Wednesday, June 23.

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Notes of interest from Here .... and There

Among its announcements of new medical books being released in the first half of 1965, J. B. Lippincott Co. of Philadelphia lists "Management of Emotional Problems of Children and Adolescents" by A. Harry Chapman, M.D., of Kansas City. Lippincott was also the publisher of Doctor Chapman's earlier book, "Management of Emotional Disorders."

The "bedside judgments" of the nation's family doctors are as helpful in evaluating new drugs as some highly-controlled, "elaborately-computerized" clinical tests. That was the opinion of Dr. Theodore G. Klumpp, as expressed before the 17th scientific assembly of the American Academy of General Practice. Doctor Klumpp, president of Winthrop Laboratories and former chairman of the Hoover Commission's Medical Services Task Force, urged GP's to inform the Food and Drug Administration and pharmaceutical manufacturers of their "experienced evaluations of the value of new drugs," based on results with their own patients.

Eli Lilly and Company has announced a price reduction of 20% on its new antibiotic Keflin®. The action was taken less than six months after the product was introduced. The company said the reduction is in line with its policy of lowering prices when economics of production permit. At the same time the company disclosed that accelerated production has enabled it to lift the restriction, that Keflin be reserved for critically ill patients in hospitals.

Insurance companies paid out a total of $2,326,000,000 in 1964 to help pay the hospital bills of policyholders. The Health Insurance Institute reports that the figure represents an average of $6.4 million a day. The payments were made under hospital expense policies and under the portion of major medical expense programs which provide for hospital charges. Including health insurance payments for other than hospital care, insurance companies last year distributed total benefits of nearly $4.7 billion, a 12.2% climb over 1963.

An experimental vaccine against primary atypical pneumonia has shown promise in animal tests. Drs. L. B. Senterfit and Keith E. Jensen, virologists of Chas. Pfizer & Co., Inc., made their report to the Federation of American Societies for Experimental Biology meeting. They developed the vaccine on a research project under the auspices of the Board for Vaccine Development, National Institutes of Health, sponsored by the National Institutes of Allergy and Infectious Diseases. The new vaccine, a killed type, has successfully protected laboratory animals against this infection.

The U. S. medical profession, the pharmaceutical industry and the Food and Drug Administration (FDA), are cooperating to establish a major addition to existing adverse drug reaction reporting programs. A Registry of Tissue Reactions to Drugs will be established within the Armed Forces Institute of Pathology (AFIP) in Washington. Joint sponsors are the American Medical Association, FDA and the Pharmaceutical Manufacturers Association. The AFIP has the world's largest repository of pathological material for research and education.

(Continued on page 436)

There are few "nots" in Miltown therapy

- **Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.**
- **The high safety-efficacy ratio of 'Miltown' has been demonstrated by more than a decade of clinical use.**

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

Supplied: In two strengths: 400 mg. scored tablets and 200 mg. coated tablets.

Before prescribing, consult package circular.

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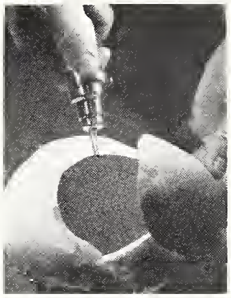
medical melange (cont'd.)

Alcoholics, particularly those with the most severe forms of the disease, are increasing among state mental hospital admissions, according to Dr. Stanley F. Yolles, Director of the National Institute of Mental Health. A study by the Institute's Office of Biometry reveals that one in seven newly admitted patients is an alcoholic, an 18% rise in ten years. In nine states, disorders associated with alcoholism lead all other diagnoses in mental hospital admissions.

A unique antitumor drug, which reacts favorably only in the presence of copper or other metals, has produced promising results against cancer in rats and mice and is being tried on human patients. The drug causes established tumors in rats and mice to regress and inhibits growth of newly implanted tumors in these species when given at, or soon after, implantation, according to research scientists of The Upjohn Company, producer of the drug. The report on the new agent, KTS, was made before the Division of Medicinal Chemistry at a national meeting of the American Chemical Society.

A new air-driven surgical instrument which reportedly saves time, reduces labor and lowers the risk in brain operations has been introduced to the medical profession. Called the Neurairtome, the air powered instrument was developed by Pittsburgh oral surgeon, Dr. Robert M. Hall. The new device slices through bone or cartilage by means of a spinning router blade which rotates at speeds up to 24,000 rpm. The instrument was developed specifically for neurosurgery but is said to be equally useful in many operations where heavy-duty cutting of bone and cartilage is involved.



A University of Michigan medical research team says that a new compound, CI-581, can produce "profound analgesia and short-lasting anesthesia." Drs. Edward F. Domino, Peter Chodoff and Guenter Corssen, of the departments of pharmacology and anesthesiology, U. of M. Medical Center, reported on the first human pharmacologic studies of the new anesthetic candidate before the Federation of American Societies for Experimental Biology. CI-581 is a new member of a series of compounds which have been under intensive study by Parke, Davis & Company research laboratories since 1956.

Admissions to schools of nursing in the United States rose to an all time high of 92,300 students in 1964, according to Fred C. Foy, chairman of the committee on Careers, National League for Nursing. That figure represents an increase of 10,400 (12.7%) over 1963. The rise can be attributed in large part to the post World War II "baby boom," which is expected to bring 63% more college-age students into higher education, Mr. Foy explained.

A new medical motion picture, *Why Blood Volume?*, produced by Ames Company, Inc., has been shown for the first time to physicians. The film was produced under the supervision of Dr. Jacob Fine, Surgeon-in-Chief, Beth Israel Hospital, Boston, and Professor of Surgery, Harvard Medical School. The film is designed to show physicians and medical personnel a new improved technique using VOLEMETRON, the original automatic electronic blood volume computor, manufactured by Ames. The 25-minute, sound, color motion picture is available for showings without charge to medical groups and organizations through Ames Film Department, Elkhart, Indiana.

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Usual dosage: Adults – 250 mg. every six hours in respiratory infections; 500 mg. every six hours in urinary and gastrointestinal infections (higher doses may be needed in severe infections). Children – (under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms.

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606 – Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

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JOHN CROWE, M.D.
Secretary

Missouri Academy of General Practice

The Annual Dinner and Installation of Officers of the Greater Kansas City Missouri Academy of General Practice was held Thursday evening, April 29, in the new Commerce Towers building in Kansas City. John M. Haight, M.D., President, presided.

During the evening activities Dr. Esther Winkelman was named "General Practitioner of the Year," by the Kansas City Academy and was presented with an appropriate plaque.

New officers of the Academy for the coming year were also elected and installed during the evening. President for the ensuing year is Walter J. Stelmach, M.D.; President-Elect is Ivan E. Lloyd, M.D.; Secretary, R. D. Dwyer, M.D.; and Treasurer, I. H. Clark, M.D. Board members elected included Esther Winkelman, M.D., Paul Young, M.D., Harry L. Biggs, M.D., C. C. Farley, M.D., K. L. Shireman, M.D. and Otto W. Theel, M.D.

The program for the evening was presented by Mr. Vern Dorse, Director of the Inland Divers School. He spoke to the group regarding underwater breathing, general diving practices and the effects of diving on the body.

Among the special guests present for the evening's festivities were Dr. and Mrs. Doyle McCraw of Bolivar. Dr. MeCraw is President of the MAGP.

On Sunday, May 2, in the auditorium of the St. Louis Medical Society, the St. Louis Academy of General Practice presented its Annual Spring Scientific Symposium. The program included scientific discussions during the afternoon, a social hour in the evening, followed by dinner and then a talk by H. M. Hardwicke, M.D., Acting Director of the Missouri Division of Health. His subject was, "The Shape of Medicine Tomorrow."

Barney W. Finkel, M.D., President of the St. Louis Academy, presided and introduced the speakers. Those appearing on the afternoon program included Leopold Hofstatter, M.D., Superintendent, St. Louis State School and Hospital; Walter W. Sackett Jr., M.D., President, Florida Academy of General Practice; Carl M. Fellhauer, M.D., Senior Instructor in Orthopedic Surgery, St. Louis University and Mr. Roy Pfautch representing U. S. Representative Thomas B. Curtis of Missouri's Second Congressional District. Congressman Curtis was unable to be present. Mr. Pfautch discussed the political implications of H.R. 6675 which was recently passed by the House of Representatives and is now being considered by the Senate Finance Committee.

More than 150 people attended the afternoon and evening affair. Wilbur A. Mullarky, M.D., was Program Chairman and with his committee, was responsible for the excellent program which was presented.

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Missouri Medicine

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JAMES W. MACKENZIE, M.D. *and*
CARL H. ALMOND, M.D., *Columbia*

Current Mortality Rates of Open-Heart Surgery

(An Analysis of 62 Consecutive Operations at the University of Missouri Medical Center)

A review of results in an extensive series of open-heart operations, plus an optimistic prognosis for continued improvement in mortality rates with this surgical procedure. The authors emphasize, however, that mortality rates do not necessarily reflect true results. Doctor MacKenzie is Associate Professor and Chief of the Section of Thoracic and Cardiovascular Surgery and Doctor Almond is Associate Professor of Surgery at the University of Missouri Medical Center.

Extracorporeal circulation as an aid in the correction of intracardiac defects has grown in the past ten years from a surgical curiosity to a generally accepted procedure. Several perfusion systems have been developed which offer the ability to operate inside the heart with reasonable safety. Because of refinements of these methods of cardiopulmonary bypass, increasing knowledge of intracardiac anatomy, and improved anesthetic management, current mortality rates seem to reflect primarily the underlying disease of the patient and the ability or inability of the surgeon to correct it.[1, 2, 3] Hospital mortality rates are easily measured and therefore have appeal in that they offer a convenient method of judging surgical results. They do not reflect long term results, or even short term results other than the patient's ability to withstand the surgical procedure and the immediate postoperative period.

The patients reported here were all operated upon between January 1, 1963 and December 31, 1964 by the members of the Section of Thoracic and Cardiovascular Surgery at the University of Missouri. This report includes all open heart procedures in which cardiopulmonary bypass was used for the repair of intracardiac lesions at this institution during these two years. It does not include operations for thoracic aortic aneurysms using either cardiopulmonary bypass or left heart bypass. All hospital deaths are reported. None of the patients has died since discharge at the time of submission of this report (January 20, 1965).

Technique of Perfusion

The equipment* consisted of a rotating-disc oxygenator with gravity return, roller pumps, and a torpedo-type heat exchanger. Mild hypothermia to about 29° to 30° C. (rectal) was used. Perfusion rates were adjusted to 2.3 liters per kilogram body weight per minute and were maintained at these high levels even during hypothermia. The unit was primed with heparinized whole blood during the first half of this experience. During the past year about 25% hemodilution with 5% glucose and 0.2% saline was used. Halothane was added to the oxygenator during bypass.

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* Made by Sarns, Inc., Ann Arbor, Michigan.

Selection of Patients

Our basic philosophy of evaluating patients for operations during this period has been to reject no patient because he was too ill for operation. If the patient had heart disease which seemed correctible by present surgical techniques, and if the disease was severe enough, he was accepted for operation regardless of poor general condition. The only regular exception concerned infants; for them operation was generally defered until two years of age. Operation was advised regardless of age if heart failure was unresponsive to medical management.

RESULTS (TABLE 1)

Congenital Heart Disease

Forty-three of the 61 patients had congenital heart defects. We have usually advised elective correction of congenital defects prior to the school age because of the obvious psychological and physical advantages. It will be noted that among these 43 patients there was one death.

Atrial Septal Defects—No Deaths. Sixteen of these patients had the secundum type of atrial defect. Five of these patients had significant elevation of pulmonary artery pressure (greater than 70% of systemic pressure) but still had a predominant left to right shunt. Two of these patients had partial anomalous pulmonary venous return which required transposition of the atrial septum.

Endocardial Cushion Defects—No Deaths. Five patients had endocardial cushion defects. Four of these patients had the incomplete form with an atrial septal defect bordering on the leaflets of the tricuspid and mitral valve. All four of these patients had a cleft mitral valve, and in two of them there was an associated cleft of the tricuspid valve. One patient had the complete form of endocardial cushion defect with a ventricular septal defect in addition to the other anomalies. Particular care in operating upon these patients must be taken to avoid complete heart block. Placement of sutures in the base of the tricuspid leaflet usually makes it possible to avoid this complication.

Ventricular Septal Defect—No Deaths. Only six patients underwent correction of ventricular septal defect, although this is the most common congenital anomaly of the heart. The relatively small number of patients probably reflects the attitudes of referring physicians or of our pediatric colleagues. All of these patients had hemodynamically significant left to right shunts. We feel, however, that after five years of age even the small ventricular septal defects should be closed, primarily because of the danger of bacterial endocarditis. At the present time this opinion is not widely shared by pediatricians. By postponing operation until the patient is five or six years of age, however, the chances of spontaneous closure are small. Further, the risk of operation for the small ventricular septal defects is extremely low and is probably considerably less than that of endocarditis.[2]

TABLE 1

Diagnosis	*Operations*	*Deaths*	*Per Cent*
Congenital Heart Disease			
Atrial septal defect, secundum	16	0	
Endocardial cushion defect			
Incomplete	4	0	
Complete	1	0	
Ventricular septal defect	6	0	
Tetralogy of Fallot	8	1	
Miscellaneous			
Congenital aortic stenosis	1	0	
Pulmonary stenosis plus atrial septal defect	3	0	
Pulmonary stenosis	2	0	
Infundibular obstruction	1	0	
Total anomalous pulmonary venous return	1	0	
Total Congenital	43	1	(2.3)
Acquired Heart Disease			
Mitral valve disease	8*	1	
Aortic valve disease	8	2	
Multiple valve disease	2	1	
Left atrial myxoma	1	1	
Total Acquired	19	5	(26.3)
Total All Operations	62	6	(9.7)

* Two of these operations were for the same patient.

Tetralogy of Fallot—1 Death. Eight patients were operated upon for correction of this anomaly. There was one death. This death was unexplained; the patient died in the operating room with inadequate cardiac output in spite of reopening the heart to further enlarge the outflow tract. In retrospect it may be that this was one of the few patients who required an outflow patch, and failure to provide this may have led to the patient's death.

Miscellaneous—No Deaths. One patient was operated on for congenital aortic stenosis, three for combined pulmonary valve stenosis and the secundum type of atrial septal defect (trilogy of Fallot), two patients for pulmonary valve stenosis, and one for infundibular obstruction. One patient had total anomalous pulmonary venous return to the superior vena cava.

Our experience with congenital heart disease leads us to feel some confidence in our current approach. In essence, this is that almost all patients with correctible congenital heart disease should be operated upon at an appropriate time. Exceptions include small ventricular septal defects discovered in late middle age, extremely mild pulmonary valve stenosis and some patients with asymptomatic congenital aortic valve stenosis.

Acquired Heart Disease

Mitral Valve—1 Death. We continue to believe that transventricular dilatation of the stenotic mitral valve offers a good possibility of relief with negligible mortality. For this reason patients with pure mitral stenosis are still treated by the closed procedure. We have undertaken eight operations for correction of mitral valve disease with the aid of the pump-oxygenator in seven patients. Four patients had repair of the mitral valve. Three patients had valves so totally destroyed that replacement with the Starr-Edwards ball valve prosthesis was required. Seven of these patients survived operation and appeared to be improved. One patient required a second operation because of deterioration of her cardiac function after initial improvement. This patient died from uncontrollable hemorrhage incurred in opening the midline incision for attempted second procedure. In our experience, open heart operations for patients with lesions of the mitral valve have been encouraging. There were no deaths after institution of cardiopulmonary bypass. All but one patient had definite improvement. In this series we have not encountered peripheral embolization from the ball-valve prosthesis, but we have been aware of this as a continuing threat.

Aortic Valve—2 Deaths. Operations upon the aortic valve carry the added need to provide protection of the myocardium. Coronary artery perfusion catheters which are easily held and adjustable in position have been a great aid within the last year.[4] With them coronary flow usually was adequate to maintain the heart in normal sinus rhythm, but if ventricular fibrillation occurred, myocardial protection was augmented by irrigation of the heart with iced saline solution.[5]

One patient underwent aortic valvuloplasty with opening of the stenotic valve and removal of numerous excrescenses of calcium from the valve. In the light of our present thinking this patient should have had a valve replacement although she survived operation and is still relatively free of symptoms 21 months after operation. Four patients had insertion of the Starr-Edwards ball valve in the aortic area. All four of these patients survived operation and all but one has been significantly improved. The single exception was a 21-year-old man with residual aortic insufficiency. He is scheduled for reoperation early in 1965. In three patients the sutureless McGovern valve was inserted. Two of these patients died during their hospitalization. One death was due to poor cardiac output in spite of intensive management of fluid and blood replacement. This patient underwent reoperation on the second postoperative day because of the possibility of cardiac tamponade, which was not present. An autopsy was not obtained and the exact cause of death could not be determined. The other patient died of definite regurgitation around the prosthesis. It is possible that with greater experience the McGovern valve may offer a significant advance in the surgical treatment of aortic valve disease, but at present we have discontinued using it.

Multiple Valve—1 Death. One patient underwent insertion of the Starr-Edwards ball valve in the aortic area and annuloplasty of the mitral valve. This man has had an excellent postoperative course and has returned to work as a truck driver. The single death after insertion of the Starr-Edwards prosthesis happened in a patient who had severe calcific mitral and aortic valve disease as well as superimposed tricuspid insufficiency. Preoperatively this patient was being maintained only with the constant use of oxygen and complete bed rest. The aortic and mitral valves were each replaced with a Starr-Edwards prosthesis and a tricuspid annuloplasty carried out. The heart was resuscitated but unable to carry effective circulation and the patient died in the immediate postoperative period.

Left Atrial Myxoma—1 Death. The only other death in this series was a 56-year-old woman who had atrial myxoma which was diagnosed preoperatively by angiography. About ten days prior to operation the patient suffered a pulmonary embolus from which she apparently recovered satisfactorily. Excision of the left atrial myxoma was carried out without apparent difficulty, but the patient died in the immediate postoperative period of poor cardiac output in spite of resuscitative efforts. It is probable that pulmonary embolectomy should have been combined with this operation.

DISCUSSION

At least two and possibly three of these six deaths were due to technical errors. Death from hemorrhage during reoperation and death from poor output after repair of Tetralogy of Fallot should be preventable. Only one death, that of the man with three valve involvement and cardiac cachexia, seemed beyond salvage with our current techniques. The remaining three deaths are not completely explained, but technical deficiencies in the method of valve insertion or in failure to carry out concomitant pulmonary embolectomy may have been to blame. In none of these patients did cardiopulmonary bypass itself appear to contribute to the patient's death. This fact allows hope for continued improvement of mortality rates, even with our current techniques of cardiopulmonary bypass.

SUMMARY

Sixty-two consecutive open heart operations in 61 patients at the University of Missouri Medical Center produced six deaths—a hospital mortality rate of 9.2%. There was one death in 43 operations for patients with congenital heart disease—a mortality rate of 2.3%. Single valve replacement with the Starr-Edwards ball valve prosthesis was carried out in eight patients without mortality.

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Palpation Versus Auscultation in Sphygmomanometry

There are circumstances when it is impossible to obtain systolic blood pressure at the brachial artery level with a stethoscope. For example, in a "bloodmobile" one cannot hear because of the noise and confusion; in cases of shock the sounds often are not audible; the same holds true in the operating room.

All physicians are aware that systolic pressure can be obtained by palpating the artery below the cuff level, but often we forget this fact. With care, the pressure obtained with the stethoscope and that obtained by palpating the pulse are comparable. The pulse is checked as the cuff is inflated and again as it is deflated.

Very seldom are pressures obtained from the leg, but this procedure also can be quite useful. Place the cuff just above the ankle over the small part of the leg. Palpate the dorsalis pedis or the posterior tibial arteries, and use the same technique as for brachial pressure.

Normally, the ankle pressure and the brachial pressure are comparable, with a difference of plus or minus ten. If pulsation of the ankle arteries is difficult to palpate, warming the foot or applying cuff pressure equal to the brachial pressure for five minutes often will relax the artery enough to make the procedure possible.

All physicians are aware of the importance of obtaining leg pressure. This method has been checked with the string Plethysmograph, but for many purposes palpating the pulsation is accurate enough.

THOMAS S. FLEMING, M.D.
Moberly

M. WENDELL DIETZ, M.D., *Springfield*

Atypical Onset of Colon Cancer

Case Reports

Reports and discussions of six cases of atypical colon cancer. Complete diagnosis in each instance resulted from some unique complication or fortuitous event, rather than from familiar symptoms and conventional procedures. Doctor Dietz is Director of the Department of Diagnostic Radiology at Burge-Protestant Hospital and Clinical Assistant Professor of Radiology at the University of Missouri School of Medicine, where the clinical material described in this paper has been previously presented in teaching sessions.

The clinical evolution of colonic cancer is generally quite conventional. Typically, "bleeding is the frequent initial symptom of rectal lesions, obstruction in carcinoma of the splenic flexure, pain in tumors arising in the transverse colon, and the presence of a palpable mass in carcinomas arising in the cecum."[1] Regardless of location, 80% of colon cancers produce altered bowel function (constipation or diarrhea).

Few of the eight intestinal cancers in the six individuals to be described were diagnosed because of familiar manifestations of this type. In each case, complete diagnosis followed a unique complication or fortuitous event.

The first two patients had synchronous carcinomas. In each case, one cancer remained occult until its companion lesion initiated an acute surgical complication.

An intestinal loop adjacent to the cancer of each of the next two patients entered an unusual type of hernia. One hernia was external (Bochdalek's foramen), compound (contained multiple organs) and silent. The tumor was a carcinoma and was obstructing the bowel. The second hernia was internal (retrocecal fossa), obstructing and unrelated to a silent ileocecal lymphosarcoma.

An incidental appendectomy performed during a subtotal gastrectomy for bleeding peptic ulcer permitted the discovery of a silent appendiceal adenocarcinoma in the case of the fifth patient.

The sixth patient was hospitalized with an obvious pneumoperitoneum. The bowel was not perforated at the site of the sigmoid cancer. Ileocecal valvular competency produced a closed-loop obstruction terminating in cecal perforation.

A brief description of each of these cases is followed by comments related to the significance of these bizarre clinical syndromes.

Report of Cases

Case No. 1. Synchronous Colon Cancers: Silent Cecal Cancer; Obstructing Transverse Colon Cancer.

An 83-year-old female was hospitalized with a chief complaint of right-sided abdominal pain. The patient had noted increasing fatigability, pallor and weight loss during the preceding several months. She had been under treatment for some years for arteriosclerotic heart disease with auricular fibrillation.

Physical examination revealed only right abdominal tenderness. A mass could not be palpated.

Barium enema studies on the second hospital day demonstrated a complete obstruction at the distal limb of the hepatic flexure (Fig. 1). The intraluminal mass outlined at the obstructive site was typical of a proliferative colon carcinoma. Additional findings were distention of numerous small bowel loops and sigmoidal diverticulosis.

Subsequent exploratory laparotomy confirmed the diagnosis of an obstructive transverse colon neoplasm. A right hemicolectomy was performed.

The carcinoma measured 5 cm. in the longitudinal direction, was predominantly annular with induration and wide extension into the pericolic adipose tissue. No nodal metastases were located. The transverse colon contained multiple small adenomatous polyps.

A second bowel cancer was readily apparent within the cecum upon examination of the operative specimen. This filled the cecal head and extended to the level of the ileocecal valve. The lesion was characterized by extensive mucinous degeneration with extension throughout the muscularis but without evidence of serosal involvement.

The patient expired 12 hours after completion of the surgical procedure. Death was attributed to cardiovascular disease and senility.

Comment: As many as 90% of cases of colon obstruction are due to bowel cancer. Neverthe-

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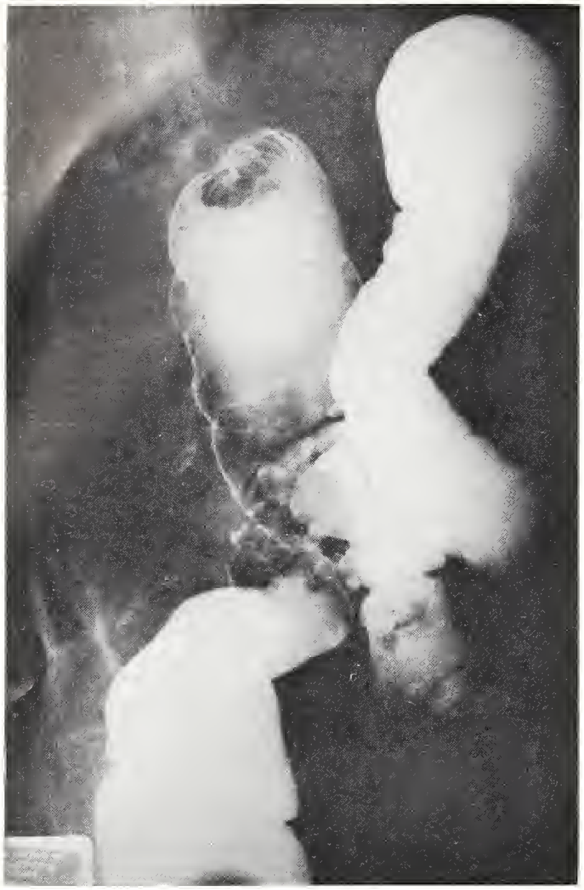

Fig. 1 Oblique barium enema film in Case No. 1. The proximal transverse colon is completely obstructed by an intraluminal mass.

less, only one in three colon cancers produces a significant degree of obstruction.[2]

The location of the tumor in the colon greatly influences the likelihood of obstruction. Classically, carcinomas of the right colon are fungating growths which ulcerate early. They tend to penetrate the bowel wall rather than encircle it as do tumors of the left half. The latter are more prone to be scirrhus and relatively small. Furthermore, the lumen of the distal bowel is smaller and the fecal contents are more solid. These characteristics are responsible for the appearance of obstruction eight times as commonly in the distal bowel as in the ascending colon.[3] The presence of obstruction is said to double the mortality of cancer of the colon.

Cancer of the transverse colon is notorious for its occultness according to Palmer.[4] These lesions tend to remain flat without encircling the bowel. Intestinal function may not be disturbed. Roentgen detection is more difficult compared with other segments. Finally, the tendency to metastasize while the primary lesion is still small adversely affects the prognosis. Often a transverse colon cancer manifests itself only through its metastases.

The cecal cancer described above was not only silent clinically but was also roentgenologically undiagnosable. The distal carcinoma produced a complete obstruction to the retrograde flow of the contrast medium, precluding cecal evaluation. Knowledge of the cecal lesion prior to its eradication through serendipity would not have altered the surgical treatment. Neither of the dual neoplasms had metastasized when found.

Case No. 2. Synchronous Colon Cancers: Silent Descending Colon Cancer; Intussuscepting Cecal Cancer.

The patient, an 88-year-old white widow, was hospitalized because of diffuse abdominal pain, marked constipation, nausea and anorexia.

Physical examination revealed abdominal distention and also a firm, 10 x 12 cm. right abdominal mass. Bowel sounds were hyperactive. The rectum contained packed, hard feces.

A barium enema was ordered for investigation of the palpable abdominal mass and also to exclude the possibility of a fecal impaction. The opaque enema demonstrated a carcinomatous deformation of the proximal descending colon. With the exception of an apple-core type of patent central channel, the mass filled the lumen.

Additional injection of barium suspension outlined a completely obstructing lesion within the mid-transverse colon (Fig. 2). The margin of the obstructed bowel was crescentic and associated with the typical coiled-spring pattern of intussusception. A brief attempt at reduction of the intussusception was unsuccessful. Post-evacuation studies revealed that the right inferior abdomen was devoid of the usual gas or fecal shadows.

Subsequent exploratory laparotomy confirmed the presence of both the cecal intussusception and the second nonobstructive tumor within the descending colon. No evidence of hepatic or lymph nodal metastases was found.

After reduction of the intussusception, a right colectomy was performed. The carcinoma within the descending colon was next removed by wedge resection.

Examination of the operative specimens revealed a cecal adenocarcinoma measuring 4 cm. in diameter. The tumor was the fungating, polypoid type and abutted on the inferior lip of the ileocecal valve. The ascending colon was characterized by marked mucosal edema consistent with intussusception. Three adenomatous polyps were found within the vicinity of the cecal carcinoma.

The descending colon cancer was a friable, centrally-ulcerated, fungating mass measuring 3 cm. maximally.

The pathologist noted that the two bowel tumors were "microscopically different and probably represented two separate primary adenocarcinomas of the colon."

The patient made an uninterrupted recovery.

Comment: By far the most common cause of intestinal obstruction in children is intussusception. In adults, however, intussusception is quite rare. Furthermore, unlike most pediatric cases in which no causative factor exists, adult intussusception is secondary to tumor in approximately 85%. Cecal lipomas are a quite common cause. Although a malignant tumor is present in at least one-half of the adult cases, carcinoma of the cecum is relatively infrequent.[5, 6]

This patient exhibited several classic manifestations of intussusception. Pain and a palpable mass occur in the majority. Neither of two additional common signs, vomiting and passage of blood or mucus by rectum, were present.

Despite her advanced age, the patient recovered promptly following the surgical procedure. Treatment had been instituted promptly after what was most probably a single attack of intussusception. In unfavorable cases, contractions of the intussuscipiens (the outermost or receiving layers) may interfere with the blood supply of the intussusceptum (the entering and returning layers), producing ulceration, strangulation and even gangrene with slough.

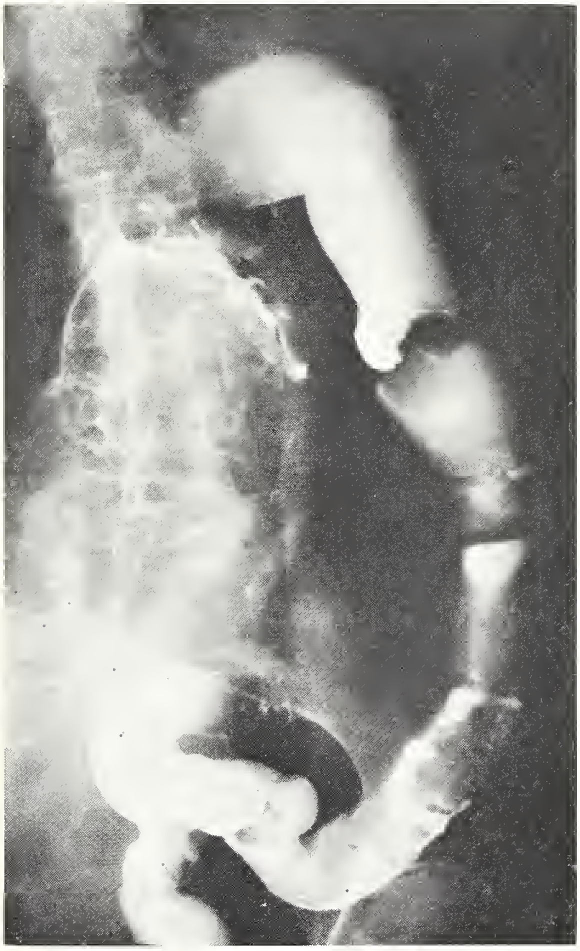

Fig. 2 Barium enema film in Case No. 2 showing nonobstructive annular neoplasm of descending colon and crescentic transverse colon deformity of intussuscepting second cancer.

The multiple malignancies were resectable and curable. Primary resection was performed without undue manipulation of the intussusception. Actually, no conclusive evidence exists to indicate that the prognosis of colon neoplasm is diminished after surgical treatment of intussusception.

It is not illogical to assume that the complication of acute intussusception, demanding immediate exploration, facilitated by serendipity not only the eradication of the occult cancer but also enhanced the prospects for cure of the intussuscepting tumor.

A recent essay on cecal cancers concludes that definitive treatment was delayed in 75% of the patients who were studied from six weeks to as long as 14 months after the onset of subjective symptoms. Only one patient of this series developed acute obstructive symptoms and these were secondary to intussusception.[7]

An unmistakable tendency for the growth of simultaneous, yet independent, primary carcinomas occurs in the colon. In a series of collective reports comprising almost 14,000 cases of colon cancer, multiple lesions occurred in an average of 4.1%. Three and even four separate primary cancers have been reported. These are regarded as synchronous lesions if multiple malignancies are detected at the same time. Metachronous cancers are less common. In these, an interval of time elapses before the appearance of a second tumor. In one inclusive survey, the average interim between metachronous carcinomas was 5.5 years.[8]

A significant percentage of patients with colorectal cancer have had a previously detected malignancy of extracolonic origin. Recent findings indicate that no less than one-third of patients surviving their initial cancer may be expected to develop a new malignancy of colonic or extracolonic origin at some subsequent time. The existence of this cancer diathesis with its obvious bearing on prognosis necessitates scrupulous follow-up observation.

Not only did the patients described in Cases No. 1 and No. 2 harbor synchronous bowel carcinomas, each case of dual lesions was also accompanied by "satellite" polyps. These can be found in the proximity of at least one-fourth of resected colon carcinomas. "The situation of these coexisting polyps seems to bear no significant relation to the cancer, and there is no difference in the distribution of cancers as found in colon with and without polyps."[8] This conclusion is, of course, inapplicable to the frequent development of synchronous carcinomas in familial polyposis. In this disease, the supervention of cancer is almost the rule.

Case No. 3. Obstructing Cecal Carcinoma. Coexisting Silent Intrathoracic Hernia of Transverse colon.

The patient, a 69-year-old female, was admitted because of cramping abdominal pain of three months duration with a three-day history of vomiting and abdominal distention. With the exception of generalized abdominal distention, physical examination was negative.

Survey chest and abdominal roentgen studies revealed an extensive retrocardiac opacity suggestive of a hiatal hernia. Numerous distended small bowel loops distributed throughout the abdomen indicated a mechanical obstruction.

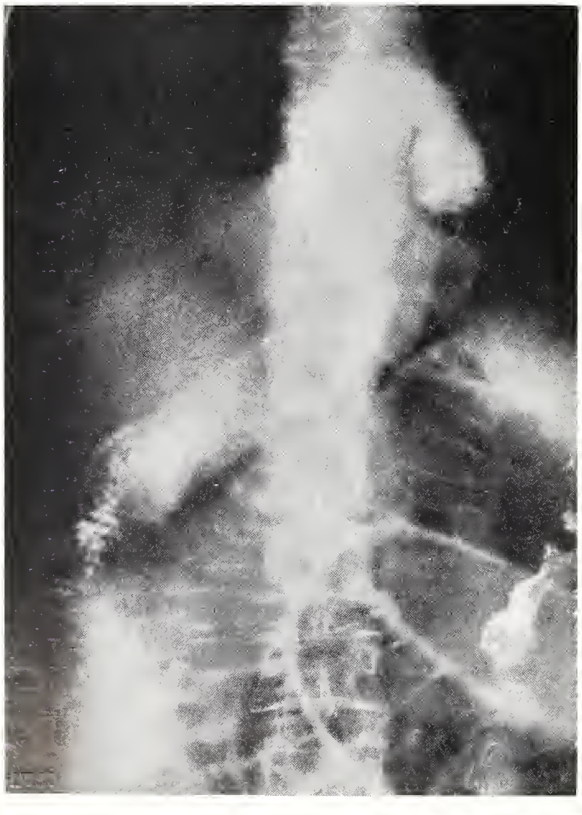

Fig. 3 Thoraco-abdominal projection in Case No. 3 showing transverse colon looped in posterior mediastinum. Note overdistended small bowel segments in upper abdomen.

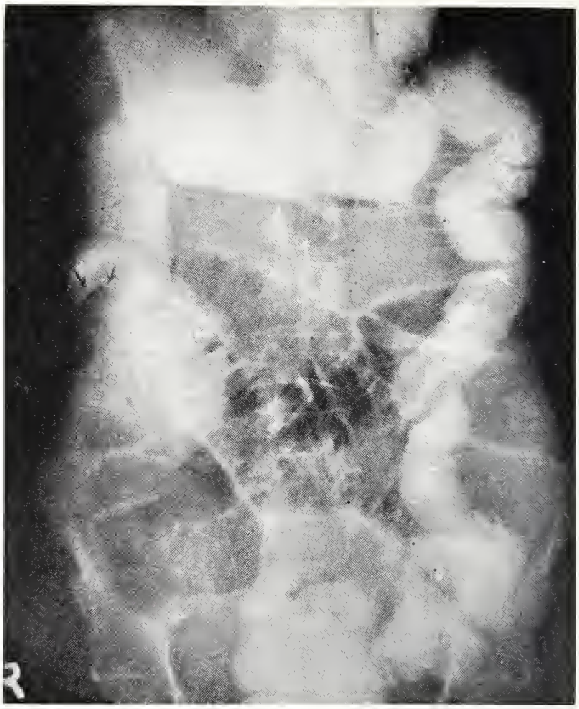

Fig. 4 Abdominal film in Case No. 3 confirms absence of hepatic flexure dilatation. Arrows indicate obstructive site: ascending colon carcinoma.

Barium enema investigation showed that the central portion of the transverse colon entered the thorax near the midline to ascend cephalad as far as the eighth thoracic vertebral body (Fig. 3). Gastric type air-fluid levels within the posterior mediastinum indicated that the intrathoracic colon was accompanied by a large segment of the stomach. (Oral barium was not administered in view of the presence of intestinal obstruction.)

The bowel was not distended proximal to the herniated colonic segment. An incomplete obstruction was detected within the proximal ascending colon, however. The occluding lesion was typical of an annular neoplasm causing cecal and small bowel dilatation (Fig. 4).

On the following day, the posterior mediastinal hernia was reduced and the diaphragmatic defect closed. An ileotransverse colostomy was established after performance of a right hemicolectomy for an ascending colon cancer.

Examination of the operative specimen revealed that the neoplasm almost completely encircled the bowel, measured 1.5 cm. longitudinally and was superficially ulcerated. Metastases were found within the adjacent pericolic fatty tissues and also within lymph nodes.

The elderly patient never recovered from the extensive surgical procedure and expired on the 13th postoperative day.

Comment: Hernia through the pleuroperitoneal foramen exemplifies the diaphragmatic hernia that is secondary to a congenital segmental absence of a portion of the diaphragm. Bochdalek's gap lies on either side of the lateral lumbosacral arch; most commonly, the left pleuroperitoneal segment of the diaphragm is involved.[9]

"Wide discrepancies in the reported incidence of hernias of the respiratory diaphragm reflects the source of the statistics." Reports of adults show a preponderance of esophageal hiatal hernias. Studies of newborn and infant populations indicate a majority of left pleuroperitoneal space hernias.[2]

Gross reported that in nine-tenths of these posterolateral herniations of infancy, no hernia sac exists. "The affected pleural cavity is filled to its very apex with intestines, a portion of the colon, and (depending upon the side involved) a part of the liver or else the stomach and spleen." Collapse of the ipsilateral lung with displacement of mediastinal contents results.[10]

Smaller pleuroperitoneal defects in adults prevent immediate herniation. The initial appearance of symptoms or diagnostic evidence of herniation in adult life is not unusual. Routine X-ray examinations of the chest or gastrointestinal tract frequently disclose asymptomatic hernias of this type. Recently, four adult patients with incarcerated Bochdalek hernias were described.[11]

The past history of this elderly patient reflected no cardiorespiratory complaints referable to the extensive mediastinal herniation. Also, there was no indication that the acute angle formed by the limbs of the herniated bowel segment was of obstructive nature.

If the distended small bowel had not been obviously separated from the herniated loop by colon of normal caliber, undue focus on the hernia could have delayed recognition of the less spectacular, localized neoplasm of the ascending colon. The proximity of these unrelated and etiologically diverse causes for bowel obstruction creates an engrossing diagnostic as well as therapeutic challenge.

A uniquely similar diagnostic enigma is presented in Figs. 5, 6 and 7 for clarification of the relationships of the herniated organs. This 72-year-old female had undergone serial gastrointestinal roentgen studies during the past 15 years for a compound posterior mediastinal hernia.

The current hospitalization followed the onset of vague epigastric distress following a dietary indiscretion. Inasmuch as her past history indicated that she had experienced no cardiorespiratory and few digestive complaints, it was assumed that an interval re-evaluation of her gastrointestinal tract and dietary regimen were indicated.

Figs. 5 and 6 demonstrate the bizarre distribution of the intrathoracic stomach and transverse

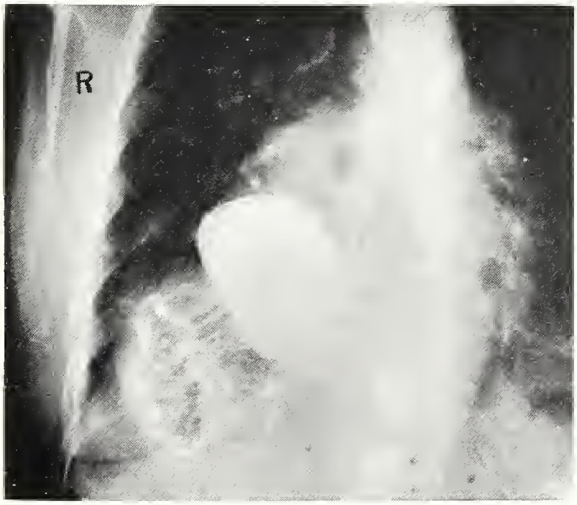

Fig. 5 Intrathoracic stomach. Fundus is inferior and lateral to gastric body and midline antrum.

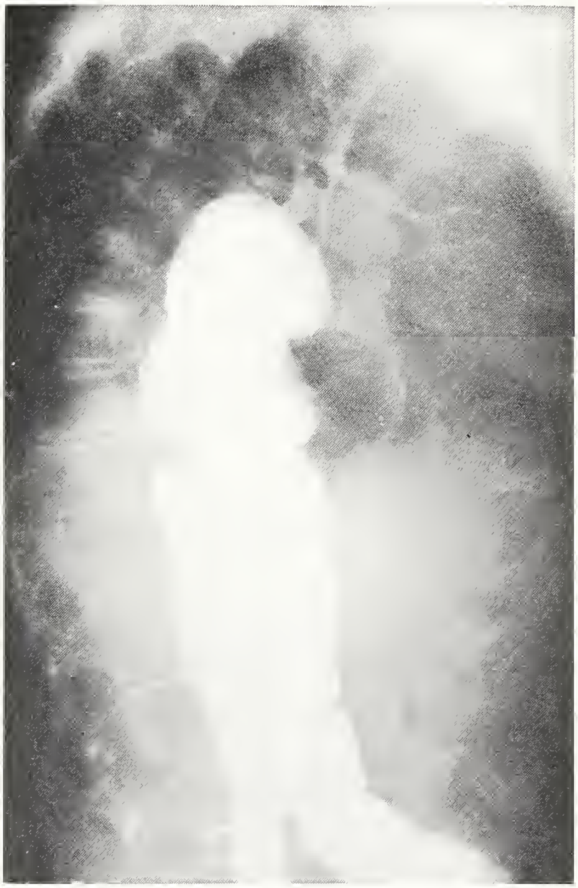

Fig. 6 Lateral barium enema film. Intrathoracic transverse colon is retrocardiac.

colon. The cecal neoplasm outlined by barium in Fig. 7 was indeed clinically occult. Nevertheless, operation disclosed that this adenocarcinoma had metastasized widely and was incurable.

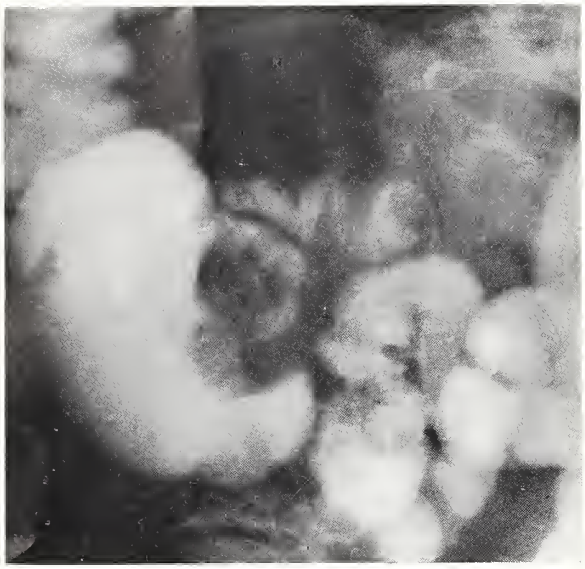

Fig. 7 Occult carcinoma of medial cecal wall.

Wangensteen has pointed out that "unlike strangulated external hernias in which the compression ring is unyielding and in which gangrenous changes in the bowel occur with frequency, in diaphragmatic hernia these are unusual. The strangulating mechanism being a muscular ring and capable of being dilated, obstruction rather than strangulation of the bowel occurs initially."[2]

Diaphragmatic hernias are considered compound if more than one organ has herniated through the involved foramen.[12] In both illustrated cases, the hernia contained stomach and colon; not uncommonly, small bowel loops accompany these structures. Compound hernias are particularly apt to significantly impair respiratory function.

Case No. 4. Silent Ileocecal Lymphosarcoma Discovered at Operation for Obstructing Retrocecal Hernia.

The patient, a 63-year-old white male, was hospitalized with a brief history of grossly bloody diarrhea, nausea and right inferior abdominal pain. Physical examination revealed that the abdomen was slightly distended and was generally tender to palpation.

Survey projections of the abdomen revealed a mechanical small bowel obstruction manifest by gaseous distention of numerous intestinal loops (Fig. 8). Absence of intestinal gas within the inferior abdominal quadrant or within any portion of the colon was noteworthy.

A barium enema revealed no colonic abnormality. Unfortunately, ileocecal valvular competency prevented reflux of the barium suspension into the terminal ileum.

At operation, the nature of the small bowel obstruction was readily apparent. The terminal ileum was "caught behind the cecum and ran superiorly in the retrocecal area. The appendix was also located in this retrocecal tunnel." The herniated loop was freed and a routine appendectomy was performed.

Because it appeared bluish and thickened, the surgeon opened a loop of distal ileum and found a sessile tumor almost encircling the lumen. Enlarged soft nodes were palpated within the mesentery of the terminal ileum.

The resected ileal segment contained a polypoid mass measuring approximately 2.5 cm. in length. The lumen of the distal appendix was obliterated. Histologically, both the ileum and the appendix contained frank evidence of lymphosarcoma.

On the 13th postoperative day, an ileotransverse colostomy was performed with great difficulty due to the accumulation of dense adhesions. The resected terminal ileum, ascending colon and mesenteric lymph nodes were involved by lymphosarcoma.

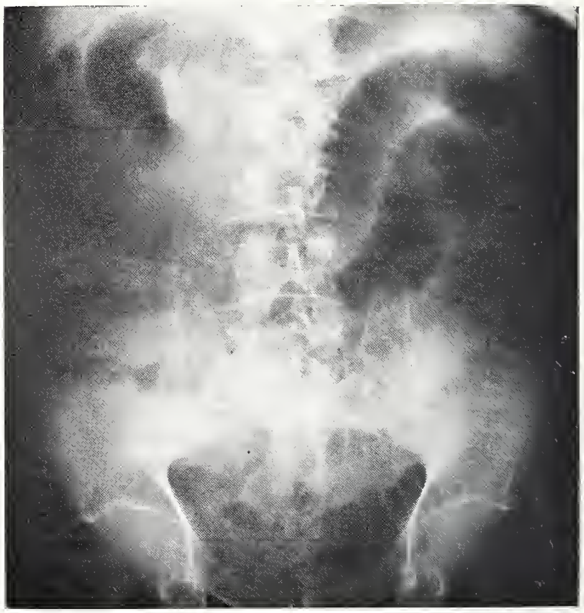

Fig. 8 Survey abdominal projection in Case No. 4 demonstrating mechanical small intestinal obstruction.

External radiotherapy was begun eight days following the regional resection.

Comment: Internal hernias, according to Hollinshead, are grouped solely by the fact that the herniated bowel does not protrude through either the abdominal wall or the diaphragm.[9] In general, internal hernias are of three types: incomplete hernias related to the anterior abdominal wall, hernias involving the mesentery or hernias involving the retroperitoneal structures. Like external hernias, they are of importance because they create an opportunity for bowel strangulation.

Retrocolic hernias are definitely of developmental nature. These are due to herniation into pouches formed by incomplete fusion of the large intestine and its mesentery to the posterior body wall. They may be quite large and appear very much like paraduodenal hernias in that much of the intestine lies behind the mesocolon.

There are no less than eight fossae in the cecal area capable of incarcerating an intestinal loop. These paracecal hernias constitute about 13% of all intra-abdominal hernias. Only two paracecal hernias are listed among the primary internal hernias studied at the University of Minnesota Hospital during an 11 year period.[2]

A review of the literature concerning paracecal hernias in 1935 disclosed 26 cases of intestinal obstruction due to this type.[2] The symptoms of obstruction may be remarkably intermittent, particularly when manifest in adult life. Incidental diagnosis of an asymptomatic internal hernia is not unusual, however.

In the small bowel, lymphoblastomas occur three times as often as does carcinoma. Nevertheless, primary lymphocarcoma of the small intestine is quite rare. In 1952, Faulkner and Dockerty described 33 personal cases and found 440 cases that had been previously reported.[13]

Although primary lymphosarcoma of the small intestine is occasionally seen in young patients, 50% of cases occur in those of 40 years or more. The incidence is highest in males. The majority of the growths found originated in the ileum.

Clinically, abdominal pain and anorexia were the most important and most frequently observed symptoms. "Typically, the pain was of the colicky, postprandial food-aggravated type so often associated with varying degrees of obstruction of the enteric canal." Nausea was present in 55% and diarrhea in 33%; only two patients of the series had melena.

The authors emphasized that "the patient often exhibited surprisingly good health except for the presence of loss of weight and a history of chronic intermittent obstruction of the bowel." In addition to weight loss, a frequently occurring sign was a palpable abdominal mass. The larger masses of this series were often found to be on the basis of a complicating intussusception.

The ileocecal lymphosarcoma in the patient described in Case No. 4 was occult. The coincidental development of an acute surgical emergency (itself quite exceptional) permitted the diagnosis of this neoplasm. Ileal lymphosarcomas do present in a striking frequency with the signs and symptoms of another surgical emergency common to the ileocecal area: intussusception.

The lymphosarcomas in the series described by Faulkner and Dockerty assume one of three major growth forms: polypoid (9 cases), aneurysmal (12 cases) or ulcerative (12 cases). In 31% of cases, the lesions were multiple. Intussusception was present in the majority of the polypoid forms and occurred particularly when the site of origin was the ileum, as it was in two-thirds of the cases.

Case No. 5. Silent Appendiceal Carcinoma Discovered at Incidental Appendectomy.

A male, age 60, was admitted with a history of having passed several tarry stools during the preceding 24 hours. Prior to the onset of melena, he had experienced postprandial epigastric distress for several weeks. The patient was acutely ill with considerable weakness and pallor.

A gastrointestinal study readily revealed a large peptic ulcer of the duodenal bulb associated with hypertrophic gastritis and duodenitis. X-ray examination of the colon was deferred in view of a definitive diagnosis of ulcerative disease.

Following the performance of a subtotal gastrectomy for persistent bleeding, the surgeon did a routine incidental appendectomy. The operative notes reveal no reference to any peculiarity of the appendix or cecum.

The pathological report described the appendix as short with complete obliteration of the lumen by dense white fibrous tissue. Scattered throughout the appendix were fairly well differentiated malignant epithelial cells tending to form acini but also irregularly infiltrating the fibrous stroma. The malignant cells produced a considerable amount of mucin but there was no cyst formation. The appendiceal serosa was uninvolved.

After a suitable interval, a right hemicolectomy was performed for the primary appendiceal adenocarcinoma. The appendiceal stump and the adjacent cecal region were indurated. Histologically, the cecum was involved by an infiltrating type of adenocarcinoma with mucinous characteristics. The pericecal lymph nodes revealed only chronic lymphadenitis.

The patient made an uninterrupted recovery. Fig. 9 is a postoperative barium enema film demonstrating the ileotransverse colostomy.

Comment: Primary malignant tumors of the appendix are quite rare. The incidence of adenocarcinoma in surgically removed appendices is

0.025%. Excluding carcinoids, 41 cases of adenocarcinoma were found during a 40 year period at the Mayo Clinic. Twenty-nine were classified as belonging to the malignant mucocele type.[8]

Costello and Saxton showed that "the preoperative diagnosis of acute appendicitis was made in half of the reported cases of primary adenocarcinoma; and in about one-fourth, acute appendicitis was also present. However, in no case was the diagnosis of appendiceal carcinoma made clinically."[14]

Inasmuch as simple appendectomy is insufficient for appendiceal cancer, the necessity for routine thorough microscopic study of appendices removed under all circumstances is indisputable.

Recognition of this appendiceal neoplasm can be attributed only to serendipity. The patient displayed clinical manifestations of neither appendicitis nor cancer. The surgeon remained unaware of the presence of appendiceal cancer until notified by the pathologist.

Re-emphasis of the unique relationship of appendicitis and carcinoma is warranted in view of the need for greater awareness of the dual lesion. Acute appendicitis may be caused by a primary carcinoma of the appendix, by metastatic carcinoma from a distant organ or by a primary carcinoma of the cecum. In these instances, there is ordinarily no suspicion of cancer prior to histological study. Patterson notes that "acute appendicitis may be considered a fortunate sequela of the location of the neoplasm, making a silent cancer announce its presence."[15]

A fourth and larger group of cases comprises those primary carcinomas of the cecum which produce symptoms and signs clinically indistinguishable from those of acute appendicitis. In the Costello and Saxton collection of 122 cases of cecal carcinoma, appendicitis was the original diagnosis in 25%. In no less than 13% of this group, "treatment of appendicitis (usually appendectomy) without recognition or suspicion of the basic lesion had been performed" prior to definitive cancer surgery. This mimicry of acute appendicitis by cecal cancer is of paramount significance, compared with the less frequent occurrence of appendicitis with coexistent cancer.

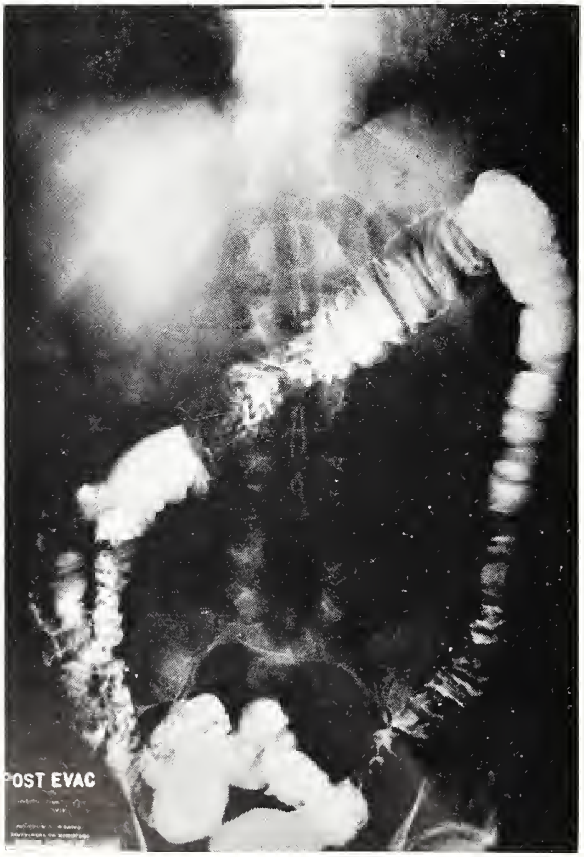

Fig. 9 Postoperative barium enema following resection for appendiceal cancer in Case No. 5. Postevacuation film shows ileotransverse colostomy.

Case No. 6. Obstructing Sigmoid Cancer Found at Operation for Rupture of Air-Containing Viscus. (Cecal Perforation.)

The patient, a 72-year-old white male, was hospitalized in uremia with a chief complaint of obstipation of ten days duration. Constipation had been steadily increasing for the preceding several months. Physical examination revealed only marked abdominal distention.

Survey chest and abdominal roentgenograms demonstrated an extensive pneumoperitoneum with generalized intestinal distention (Figs. 10 and 11). Intraperitoneal air combined with intraluminal gas to outline both the inner and outer surfaces of the walls of several bowel loops.

Both erect and recumbent films revealed a midline subphrenic gas collection suggestive of air within the lesser omental sac. Unfortunately, lateral views were not obtained. Inasmuch as free intraperitoneal air beneath the anterior mid-portion of the diaphragm is much more common, a lateral projection is essential for demonstration of the posterior location of a lesser sac air collection.

An exploratory laparotomy was scheduled without delay precluding contrast X-ray studies of the gastrointestinal tract.

Exploration revealed a large amount of free peritoneal gas under pressure with a foul fecal odor. A small perforation of the anterior surface of the cecum was accompanied by a collection of liquid fecal material in the right abdominal gutter. A constricting carcinoma of the sigmoid colon was responsible for the proximal bowel dilatation.

After the cecal perforation was closed, an obstructive type of sigmoid resection was performed. This permitted biopsy studies of the neoplasm; no attempt was made to resect the obstructing cancer. The terminal condition of the patient necessitated a prophylactic tracheotomy.

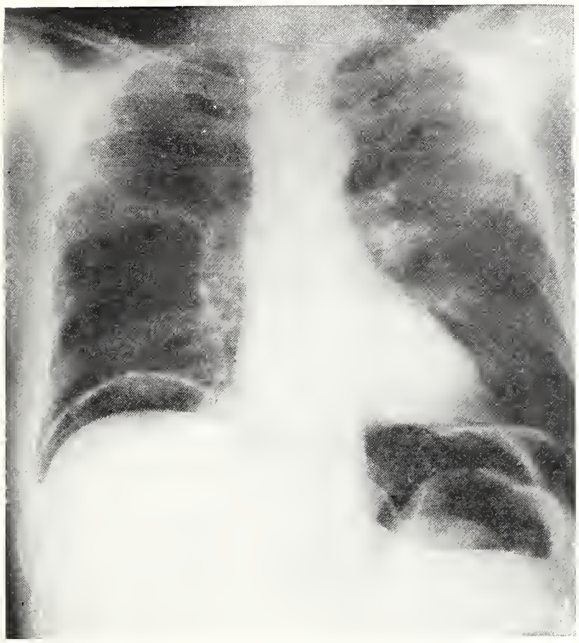

Fig. 10 Erect chest film in Case No. 6 revealing bilateral free subphrenic air.

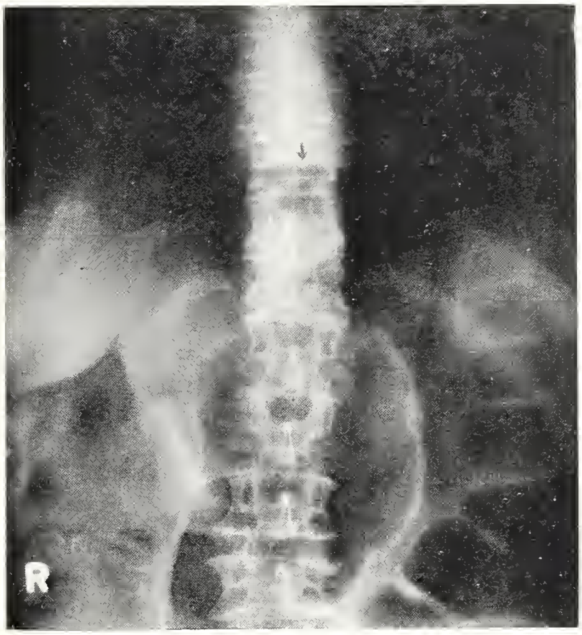

Fig. 11 Recumbent abdominal film in Case No. 6 shows pneumoperitoneum, intestinal distention and midline gas collection (arrow), perhaps in lesser sac.

The patient failed to respond to treatment of the generalized peritonitis and died on the third postoperative day.

Comment: In at least 90% of instances of colon perforation due to obstruction, it is the cecum which perforates.[16] For this reason, the degree of cecal distention present must be promptly determined in each patient with colon cancer who develops an acute complete obstruction.

In sigmoidal obstruction, the prestenotic loops distend relatively slowly. The more proximal colon segments frequently expand rapidly and widely. The disparity in extent of distention of these segments has been attributed to the anatomical differences in the bowel wall. In comparison with the cecum, the distal colon is characterized by increased thickness and strength. It is the thinness of the wall of the cecum which permits, clinically, palpation of a balloon-shaped mass and, roentgenologically, the typical signs of cecal distention in sigmoidal stenosis.[17]

Abdominal survey films may by inference suggest an annular sigmoid cancer when the dilated cecum attains a diameter unlike that of ony other bowel loop, an oval shape and perhaps an air-fluid level. If mobile, the dilated cecum may appear in the epigastrium or below the left diaphragm and displace the transverse colon upward.

Fig. 12 illustrates enormous cecal distention without perforation secondary to a sigmoid carcinoma. Distally, the tumor prevented the retrograde injection of a barium enema. Proximally, the stenotic tumor and a competent ileocecal valve created a closed-loop obstruction. A column of homogeneously dense feces is faintly visible in the airless descending colon.

During barium enema studies, the fluoroscopist obtains reflex of the opaque suspension into the terminal ileum in as many as 90% of patients. Nevertheless, in the presence of a complete obstruction of the lower bowel, the ileocecal valve is competent in a large percentage of patients. The small intestine is thus prevented from participating in the intestinal distention and the trapped air collection is confined to the colon between the ileocecal valve and the obstructive site. A closed-loop obstruction of this type subjects the cecum with its thin walls and greater diameter to damage more often and more quickly than any other part of the distended colon. Interference with circulation in the cecal wall is followed by necrosis, perforation and peritonitis.[2]

The closed-loop obstruction phenomenon is irrelevant in the 10% of intestinal perforations complicating colon cancer which occur at the site of stenosis. A sigmoidal perforation may initiate a vesicocolic fistula; perforation of the transverse colon may result in a gastrocolic fistula. Sudden perforation of a cecal cancer is unusual, but penetration with formation of a pericecal abscess is not uncommon as a presenting complaint.

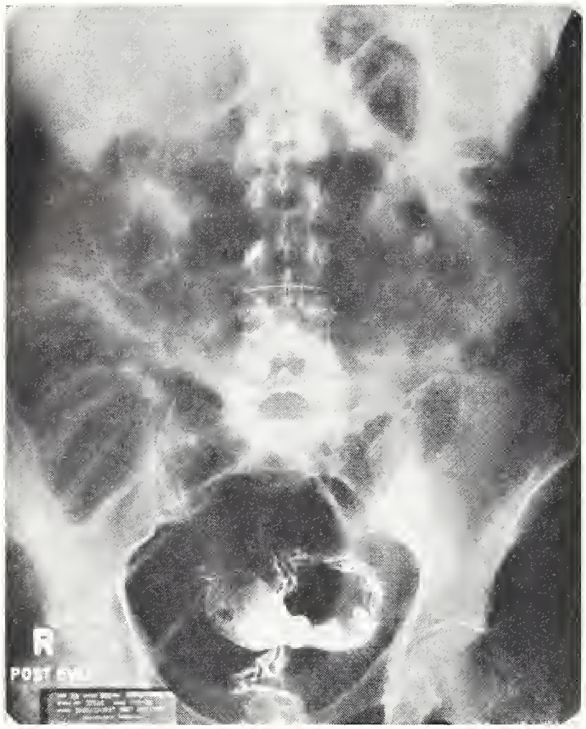

Fig. 12 Closed loop obstruction: gaseous distention of dilated cecum and stenosing sigmoid cancer.

SUMMARY

A collection of unique clinical syndromes, either coexistent or resulting from colon cancer, is described to emphasize the limitless spectrum of diagnostic enigmas created by this prevalent neoplasm.

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Although there may be a need for controlling false claims for medical devices, one might well hope that the haste which resulted in the new laws and regulations about drugs will not serve as a pattern for legislation related to physical devices. The drug controls, in many respects, appear to go far beyond what is necessary to ensure reasonable safety. Surely, in the final drafting of bills on medical devices, experts in the industry as well as university researchers should be given full opportunity to make available their knowledge and experience.—Morris Fishbein, M.D., in *Medical World News,* 6:6, (Feb. 19) 1965.

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Chocolate as a Cause of Acne: A Dissenting View

ALTHOUGH MOST TEXTBOOKS of dermatology repeat the credo that eating chocolate aggravates acne, there is almost no evidence to sustain this belief. Of all the foods, chocolate has been most frequently and consistently incriminated as a cause of acne.[1] Even before chocolate became popular, a judicious dietary regimen was an important part of the care of acne.

For about two centuries, physicians have considered the proper diet to be directly beneficial in the treatment of acne. While physicians often advise various "sensible" and "natural" or "healthful" diets for the vague purpose of "promoting proper function," it may be noted in contrast that acne diets are thought to act immediately and directly on a cause of acne. An uncritical enthusiasm for diets may be a legacy from humoral pathology.

Throughout the 19th century, many medical authorities[2] felt that dyspepsia and constipation were associated with acne. Many held the opinion that spicy foods and "heavy" foods which lingered in the stomach were particularly apt to aggravate the disease. Therefore, patients were advised to avoid pastries, cheeses, pickles and stimulating beverages for the benefit of their complexions. As late as 1920, Darier interdicted these foods to his acne patients and suggested that:

> "The physician must see to (the patient's) regularity of meal hours, good mastication, the condition of the teeth, and regular evacuation of the bowels which will sometimes have to be secured by suitable laxatives. Exercise, friction of the cutaneous surface and massage contribute to regulate the general circulation. Besides bradyphagia . . . facial gymnastics often prove really efficient."[3]

A brief study which indicates that chocolate has been unjustly cast in its role of the *bete noire* of acne sufferers. The study also gives added evidence to the idea that diet regulation plays only a minor role, if any, in effective acne therapy. Doctor Grant was a senior medical student at the University of Missouri when this work was done. Doctor Anderson is Assistant Professor, Division of Dermatology, University Medical Center.

In 1909, cocoa[4] was mentioned as a specific cause of acne and in 1921 Sutton suggested that chocolate[5] may act to worsen acne by increasing blood lipids which might affect sebaceous activity. There has been little change either in the advice or the rationale for this advice during the century. Many modern dermatologists, however, have demoted dietary therapy of acne to a minor role, probably because diet regulation does not seem to control acne in most instances and the benefit from hormone or antibiotic therapy is more impressive.

At the University of Missouri Student Health Service, 200 students have been studied as part of the continuing investigation of the acne problem. When interviewed concerning the dietary treatment of acne, over 90% of the students said they avoided chocolate and other supposed acneogenic foods on the advice of their family, friends or physicians. Only a few, however, were persuaded from their own personal experience that these foods caused an exacerbation of their disease. This great disparity between the patient's ritualistic observance of the diet and the meager results prompted our inquiry into the effects of large amounts of chocolate on acne.

PROCEDURE

Eight persons with mild to moderate acne volunteered for this study. Three members of this group were highly confident that chocolate made their acne worse. The others noted no particular effect of chocolate; nevertheless, they avoided it. A diagram was made of each subject's face indicating the location and type of each acne lesion.

The participants then ate a 9¾ ounce milk chocolate bar in the presence of a physician and were instructed to eat a second bar on the following day. To evaluate the possibility that nonspecific gastric irritation might aggravate acne, one half of the group also received Maalox* prior to eating the chocolate. None of the patients used topical or internal medication for their acne in the period prior to or during the experiment. Since the subjects were examined regularly for several weeks before the project, a regular pattern of variability for their acne was predictable. Furthermore, the subjects were chosen to avoid menstrual periods or other apparent causes of exacerbations in acne.

On the fifth day of the test and again on the seventh day, the patients were carefully examined and their faces were compared with the diagrams. At the first examination after the consumption of the chocolate, four of the eight subjects had developed no new lesions and they had even observed healing of some lesions which were present at the beginning of the test. The other subjects developed no more than three small pustules at the same time other lesions were healing. Having enjoyed continuous improvement, four of the eight subjects still had developed no new lesions at the time of the final examination. This final examination also showed that two of the four patients who manifested new lesions at the first inspection had acquired no additional ones, while the other two subjects experienced only two small erythematous papules. The lesions exhibited by the patients represented the usual variation of their acne and were not considered a significant aggravation of their disease by us or by the patients themselves. The use of Maalox had no noticeable effect on the results of this experiment.

Discussion

The aggravating effects of chocolate on acne should be evident three days following ingestion since this allows adequate time for its absorption and metabolism. Certainly these processes should be completed by the fifth day. Most of the patients were surprised, after a day or two, not to see a worsening of their acne because they were entirely confident that chocolate would cause numerous large erythematous lesions to appear.

The subjects enjoyed eating only the first few bites of chocolate and were tired of it by the time they had completed the first 9¾ ounce bar, which is equivalent to about six of the regular ten-cent size chocolate bars. We may presume that the subjects ate the second chocolate bar and thereby received almost 20 ounces of chocolate in 48 hours. Even if none of them ate the second bar, the total amount of chocolate consumed in our presence could be expected to produce a significant flare-up if the common credo about chocolate producing acne is entirely correct.

Occasionally a short study can test a strong statement. To demonstrate in eight instances that acne could progressively heal, showing no significant flare-up whatever following the ingestion of 20 ounces of chocolate, discredits the unqualified assertion that "chocolate causes acne."

Summary

An attempt to cause an aggravation of active acne in eight subjects by feeding large amounts of chocolate failed. Some further doubt has been cast on the importance of diet in treatment of common acne.

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* Trademark, Rorer Co. for Aluminum-Magnesium Hydroxide.

JAMES N. BURKEHOLDER, M.D., *Columbia, and*
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Hepatic Glycogen Disease in Identical Twins

Case Report

Hepatic glycogen disease is associated with a deficiency of glucose-6-phosphatase and a variety of enzymatic defects. It is characterized by massive hepatomegaly, retarded growth, hypoglycemia, hyperlipidemia and frequent episodes of metabolic acidosis complicating infections. To the authors' knowledge, occurrence of the disease in identical twins has not been reported previously. Doctor Burkeholder is an Instructor and Trainee in Juvenile Diabetes Mellitus and Metabolism (Training Grant No. Ti-AM-5110-08), Department of Pediatrics, University of Missouri Medical Center. Doctor Owen is Assistant Professor of Pediatrics, State University of Iowa Hospitals.

HEPATIC GLYCOGEN DISEASE was initially described in 1928 by van Creveld[1] and in 1929 by von Gierke.[2] It was not until 1952 that a deficiency of glucose-6-phosphatase was associated with this disease.[3] Subsequently, with investigations of different expressions of hepatic glycogen disease, a variety of enzymatic defects[4] has been described. Hepatic glycogen disease has been reported in siblings,[5] but to our knowledge has not been reported in identical twins. Skeletal muscle glycogenosis has been reported in identical twins,[6] and different enzymatic defects have been described in siblings.[5]

CASE REPORT

Identical,* white, female twins were referred to University Hospitals, University of Iowa, at the age of five months because of diarrhea, fever, abdominal distension and hepatomegaly. The family history failed to reveal evidence of similar or related disorders. Preeclampsia probably complicated the last trimester of the full term pregnancy although labor and delivery were reported uneventful. The physician attending at the time of delivery believed these were monozygotic twins on the basis of a monochorionic, diamniotic relationship.

The children were considered healthy until three months of age when abdominal distension and hepatomegaly were first observed. Thereafter, the twins had frequent minor respiratory illnesses. Neither twin had experienced convulsions.

Both infants were "doll-like" in appearance (Fig. 1) and were approximately 5500 gm. in weight and 60 cm. in length (values near the third percentile on the Iowa Growth Chart).[7] Abdominal distension and hepatomegaly were present, the liver in each instance being palpable 7 cm. inferior to the right costal margin.

Twin "A" was still living at the time of this report, but twin "B" expired at the age of 23 months. Postmortem findings* of Twin "B" revealed hepatomegaly with increased amounts of lipid and PAS positive material which disappeared with diastase. Renal hyperplasia was also noted with large tubular epithelial cells which also contained increased amounts of PAS positive material which disappeared with diastase.

Results of laboratory studies made at the time of admission are summarized in Table 1. Both children were slightly anemic and had moderately severe metabolic acidosis, hypoglycemia, hypercholesterolemia and hyperlipidemia. Coagulation studies were nor-

TABLE 1

CLINICAL LABORATORY DATA

	Twin "B"	*Twin "A"*
Blood		
Hgb (gm/100 ml)	10.2	9.7
Leukocytes (1000/mm^3)	6.75	9.65
Differential Count		
PMN (%)	8	27
Lymph (%)	85	67
pH	7.20	7.26
Reducing sugar (mg/100 ml)	8	2
Serum		
Urea N. (mg/100 ml)	25	27
Sodium (mEq/l)	130	143
Potassium (mEq/l)	5.6	5.0
Chloride (mEq/l)	95	99
CO_2 (mEq/l)	11.8	9.0
Cholesterol (mEq/100 ml)	405	347
Phospholipids (mEq/100 ml)	193	171
Triglycerides (mEq/100 ml)	3370	3580

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* Identical as established by physical appearance, blood groupings and placental findings.

* Blood groups and post-mortem findings were obtained with the cooperation of Dr. Vincent C. Kelley, The Children's Orthopedic Hospital & Medical Center, Seattle, Washington.

TABLE 2

Effect of Administration of Glucose, Glucagon and Epinephrine on Concentration of Total Reducing Sugar[a] (mg/100 ml) in Plasma

						Minutes			
	Fasting	*30*	*60*	*90*	*120*	*180*	*240*	*300*	*360*
Glucose (orally)[b]									
Twin "B"	0	98	208	—	108	90	28	—	—
Twin "A"	2	108	96	—	86	58	6	—	—
Glucagon (infusion)[c]									
Twin "B"	32	5	10	—	16	5	5	—	—
Twin "A"	50	8	6	10	6	3	—	—	—
Glucagon (injection)[b, d]									
Twin "B"	28	64	124	116	136	86	46	18	22
Twin "A"	2	122	—	106	140	88	40	10	4
Epinephrine (injection)[e]									
Twin "A"	44	4	4	6	8	—	—	—	—

[a] Method of Somogyi,[8] using capillary blood.
[b] Glucose, 2 gm/kg., after 3 hour fast.
[c] Glucagon infused at rate of 1 mg/hour (in isotonic saline) with subject in fasting state.
[d] Post-prandial injection of glucagon (0.1 mg/kg.).
[e] 0.1 ml of 1:1000 Epinephrine injected, subcutaneously, after a 3 hour fast.

mal. Urinalyses were not remarkable except for presence of acetone on several occasions.

Oral glucose tolerance tests, glucagon infusions and post-prandial glucagon injection tests were studied in both twins. Only twin "A" was studied with an epinephrine tolerance test which resulted in marked hypoglycemia (Table 2).

The oral glucose tolerance test established the presence of extreme hypoglycemia four hours after a carbohydrate meal. The injection of glucogen immediately following a glucose meal did not seem to delay the onset of profound hypoglycemia as had been reported previously.[5, 9] A zinc-glucagon preparation was not available at the time of these investigations.

The liver size in both children decreased by 3-4 cm. during the infusion of glucagon, but the massive hepatomegaly was observed again shortly after the completion of the infusion (Fig. 1).

The histopathologic findings were indicative of hepatic glycogen disease. The liver cells appeared swollen and finely vacuolated. The appearance suggested the presence of a large amount of glycogen, and there appeared to be an increased amount of lipid material. The concentrations of glycogen in liver tissue obtained at laparotomy were elevated to 9.9 gm/100 gm (normal range, 2-6%) in twin "B" and 11.2 gm/100 gm in twin "A." There was virtual absence of glucose-6-phosphatase activity in both biopsy specimens while levels of phosphorylase, glucose-6-phosphate dehydrogenase and phosphogluconate dehydrogenase activity were within normal limits.*

Comment

The findings of massive hepatomegaly, delayed growth, metabolic acidosis, ketonuria, hypoglycemia, hyperlipidemia, recurrent infections and the general appearance of the identical twins were suggestive of the diagnosis of hepatic glycogen disease. An interesting finding was the almost complete absence of symptomatology and absence of convulsions while the twins were extremely hypoglycemic.

The results of the biochemical studies with the twins were similar. A marked impairment of free glucose release was noted upon stimulation of glycogenolysis with epinephrine in twin "A" and with glucagon infusion in both twins. These results suggested a complete absence of glucose-6-phosphatase in both children and appeared consistent with the findings of deficiency or absence of glucose-6-phosphatase activity.[5, 9]

The glucose tolerance tests indicated that with the same carbohydrate intake, an interval between feedings exceeding four hours would result in extreme hypoglycemia in both infants. When these values are compared with those from the post-prandial glucagon injection studies, it is apparent that a substantial blood glucose level was not maintained by the glucagon. This would indicate that glucagon injections would benefit these patients only slightly in an attempt to prolong the interval between feedings. The blocking effect of glucagon upon the formation of liver glycogen was not evaluated. Lactic acid levels were not determined.

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* Glycogen content and enzyme studies were performed by Dr. Joseph E. Sokal, Roswell Park Memorial Hospital, Buffalo, New York.

The changes in liver size with the glucagon infusion are recorded in previous reports.[5, 9] Similar findings were observed in these twins. The variability in response to this test may be related to structural changes present within the liver as well as individual variability in glycogen mobilization in response to administration of glucagon.

The enzymatic studies confirmed the diagnosis when correlated with the previous studies and findings.

Hepatic glycogen disease probably is a recessive genetic trait, but the hereditary aspect has not been completely documented. The enzymatic defect probably results from a gene deletion. If one identical twin has an enzymatic defect, the other twin should exhibit the same defect. The stability of the defect in the transcription process is verified since both twins had identical enzymatic defects. Consequently, the presence of an identical enzymatic defect in each of twin infants further establishes identity.

CONCLUSION

History, physical findings and laboratory studies of identical twins were suggestive of hepatic glycogen disease with deficiency or absence of hepatic glucose-6-phosphatase. Histologic and enzymatic studies of liver tissue obtained from both infants and the post-mortem examination of twin "B" confirmed the diagnosis.

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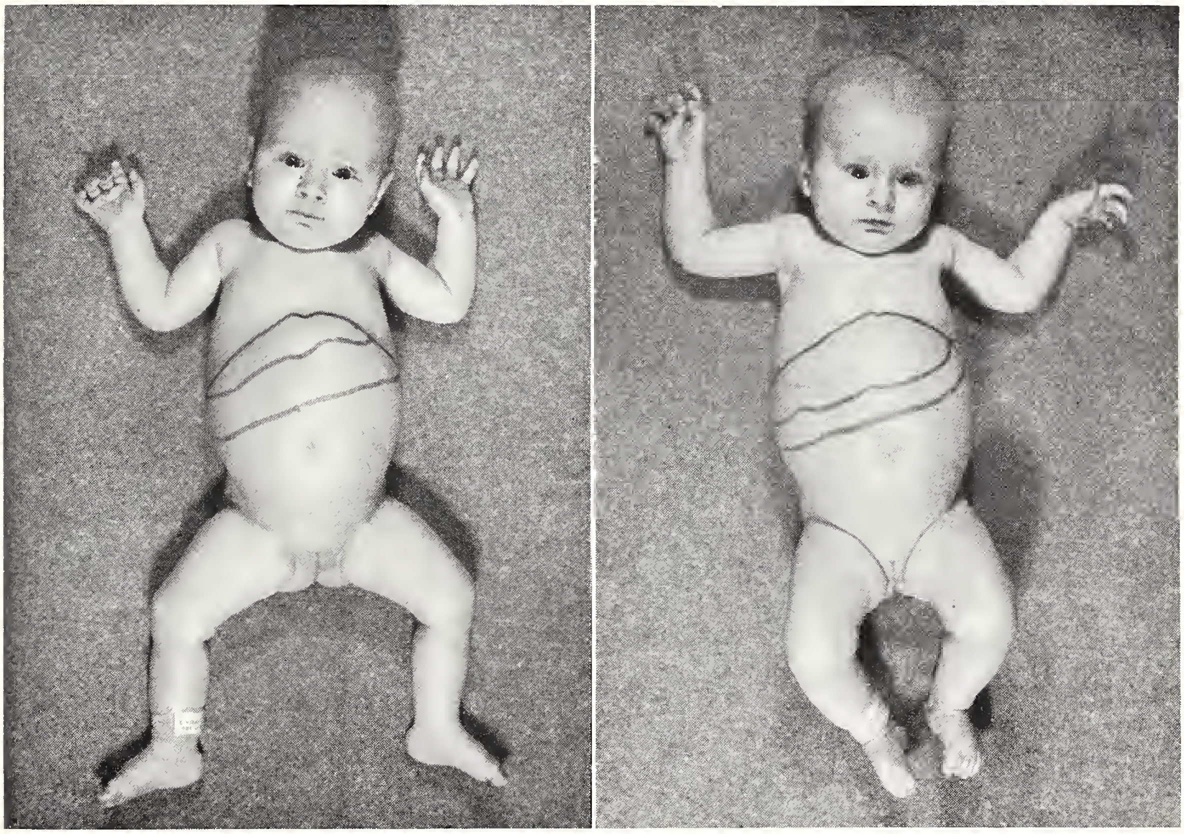

Fig. 1 Appearance of twins (Twin "A," l., Twin "B," r.) at age of six months after intravenous infusion of glucagon. Upper line represents the costal margin; middle line the liver margin after four hours of glucagon infusion; lower line the liver margin prior to and several hours after the glucagon infusion.

ROBERT E. FROELICH, M.D., ***Columbia***

Psychiatric Inoculation in the Peace Corps

IN THE SPRING OF 1964 the Department of Psychiatry, University of Missouri School of Medicine, was invited to participate in the training program for Peace Corps volunteers taking place within the University. This program brought to Columbia, Missouri 88 volunteers for 12 weeks of training in preparation for assignment in Ecuador, South America. All but two were between the age of 21 and 27. There were three single girls and five married couples in the program. Ninety per cent had a college degree. It is understood that about 12% of those who apply are invited for training.

Many were motivated to enter the Peace Corps because of plans to work overseas with either a United States Embassy or private enterprise. Other motivation included a chance to test themselves, or a chance to carry out one of the late President Kennedy's programs, while some were seen as restless, wanting to get away from the life they had known.

The major training requirement was that the volunteer become conversationally fluent in 12 weeks in the foreign language. Other educational requirements included physical education (including a 10-mile hike in 95° weather), health education, political science, social and cultural aspects of Ecuador, and mental health training. Two returned volunteers, who had completed a two-year assignment in Ecuador, worked with the administration in this training program.

A report on one phase of the Peace Corps training program at the University of Missouri. The author reviews the major emotional problems which have been found among Peace Corps workers in overseas assignments and the preventive program which has been initiated to minimize those problems. Doctor Froelich is Assistant Professor of Psychiatry at the University School of Medicine, and head of the Department of Medical Communication.

The psychiatrists work in the selection process which includes evaluation at mid-session and final boards. The selection process is the responsibility of a psychologist with the title of Field Assessment Officer. The psychiatrists are consultants to the Field and Local Assessment Officers. Selection is based upon anecdotal comments from each instructor, grades in the academic work, motivations as expressed through the volunteer's behavior, individual interviews with the psychologists and psychiatrists, group sessions with psychiatrists, and screening psychological testing. In the program at the University of Missouri, 26 of the 88 volunteers were selected out primarily on the basis of immaturity which was reflected through lack of motivation, being unsettled, and being constricted to the point that coming to Columbia was a cultural shock. A few were selected out because of failure to meet the language requirements, and several were selected out because of emotional instability.

The nation-wide Peace Corps program employs two full-time psychiatrists on loan from the National Institute of Health. During the summer of 1964, 5,000 volunteers were in training and 120 psychiatrists, devoting one day a week, were working with the training programs. In the past, 300 psychiatrists have worked with the Peace Corps.

In order to understand the problems facing the psychiatrists working with this program, a review of information about the overseas assignment, as gathered by the Washington office of the Peace Corps from surveys of the returning volunteers, will be presented. Remarks will apply to Central and South America rather than to other parts of the world where the experiences and problems are quite different.

EMOTIONAL REACTIONS WHILE OVERSEAS

Upon entering a foreign country everyone goes through what is called "cultural shock" or "crisis of arrival." Sociologist George M. Foster states that cultural shock is a mental illness.[1] As described by Charles Arnold, M.D., this cultural shock involves four areas of adjustment.[2]

The *first* is the communication barrier imposed by the foreign language as well as by the foreign culture.

The *second* is the new identity of the individual as defined by the foreign culture. How do natives see him?

The *third* area of culture shock involves the sense of realization of one's isolation (physical and cultural), of the different educational level of the community in which he is working, and of the absence of incentives in those with whom he is working.

The *fourth* area of adjustment rests in the new value system which finds different values placed upon cleanliness, hygiene, food, life and money, to mention but a few. Strange foods add to the adjustment problem. Homesickness is predictable and expected.

An illustration of this cultural shock in this first period of anxiety is illustrated by the following comments which are part of a letter returned to Washington by a Peace Corps volunteer working in Ecuador.

> "What is difficult to get accustomed to are many of the attitudes and practices of the people. Several examples come to mind. At 3 o'clock in the afternoon you tell a member of the Board of Directors of your project that there is a meeting at 7 o'clock and you ask him if he will come. He assures you that he will be there. *Como no, como no, chico yo se que esta reunion es sumamente importante.* At 7 o'clock, at 8 o'clock, and at the meeting's end there is no sign of the man. The next day you see him and he offers neither apology nor excuse."

CRISIS OF ENGAGEMENT

Following this brief period of cultural shock and anxiety comes a second period beginning sometime between the second and seventh month. This is a period of depression and it usually lasts from two to three weeks. During this time the volunteer begins to realize that his dreams of what he will accomplish in the foreign country are not possible; that he is really accomplishing much less than he hoped for (he sees only slow results of his efforts); that the frustrations are about to get him down; and that just the burden of living in a hostile environment is difficult.

CRISIS OF ACCEPTANCE

At about the eleventh month, the volunteer begins to accept the ways, the mores, and the value systems of the native population. During this period he questions the value systems of the United States, of our way of life, and why we are requiring him to change "his" people's way of life when they seem to get more out of life, in their own way, than he has known. The volunteer begins to ask himself, "Who am I?" and "What do I stand for?" The volunteer becomes short-tempered and fatigued. He becomes very hostile. At this time critical letters are written back to Washington as well as to other destinations. The volunteer is advised, "Don't just do something, stand there."

CRISIS OF RE-ENTRY

The fourth reaction is a period of anxiety during the last two months overseas. This reaction is triggered in the volunteer by feelings about separation from his work, feelings about his way of life the last two years, and feelings about the future at home. All of these feelings make this a period of social, cultural, and economic readjustment.

THE PSYCHIATRIC INOCULATION TO PREVENT SERIOUS ILLNESS

During the 12 week training period, psychiatrists work with the Peace Corps volunteers in groups and with some few individually. During the training period the same four periods of feelings arise. There is a minor cultural shock, a period of depression, a period of hostility, and a period of separation anxiety coupled with the anxiety of the final Peace Corps evaluation boards. Thus, in group sessions during these key periods the volunteers are asked to react to their present feelings and to discuss ways of handling the feelings. The volunteer recognizes that (1) these feelings are normal, (2) these feelings do exist, they are REAL, and (3) other volunteers have learned to defend against these feelings. It is felt that this training in groups is helpful when coupled with continued group sessions in the final training in Puerto Rico and in the overseas assignment. In the overseas assignment it is found that the most effective way to deal with depression is to bring the volunteers together in the capital cities and let them exchange frustrations, ideas, and accomplishments.

As an interesting aside, it has been learned that the returning volunteers are seeking psychiatric help in large numbers. Most of the help is of a brief, few-visit type; but through their association with psychiatrists and psychologists, the barriers to requesting psychiatric help have been abolished.

SUMMARY

The summer training program at the University of Missouri, the emotional problems of an overseas assignment and the preventive psychiatric training program in the Peace Corps are reviewed.

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WILFRED E. WOOLDRIDGE, M.D., ***Springfield***

An Interesting Family History of "Thalamic Syndrome"

Case Report

The concept of neurologic symptoms and findings of rather striking and varied nature, limited to a single side of the body from head to foot, is one which has received but scant attention in medical literature. This idea is not recent, however, but was first proposed by Dejerine and Roussy in 1906.[1] Such cases later became known as the Dejerine-Roussy Syndrome or, more familiarly, the "thalamic syndrome."

As first described, cases of thalamic syndrome most often followed a stroke with a resultant lesion in the optic thalamus. Some, or all, of the following findings comprised the syndrome:

1. A persistent loss of superficial sensation of one-half the body and face. A loss of touch, pain and temperature of varying degree with the loss of "deep" sensibility being more pronounced.
2. Slight hemiataxy and a more or less complete astereognosis.
3. Acute pains on the same side, persistent, paroxysmal, often intolerable and yielding to no analgesic treatment.
4. Slight and transient hemiplegia.
5. Choreic and athetotic movements in the limbs of the affected side.

Following the original description of the thalamic syndrome, this condition became better understood through the work of Henry Head. In his volume of *Studies in Neurology*,[2] Head described his experiences with twenty-four cases of thalamic syndrome. Most of these followed strokes, also.

After the fundamental nature of the thalamic syndrome was described, further elaboration was accomplished by Alvarez in his texts,[3, 4] and it is now appreciated that this condition can occur in psychic states as well as those involving organic lesions of the optic thalamus. Alvarez has made it clear that some patients may show little or no objective sensitiveness on the affected side, although complaining of much subjective distress. Likewise, he has indicated his belief that many patients exhibiting the more liberal concept of thalamic syndrome do so as a result of nervous storms which temporarily escape thalamic control. They may mimic those cases with lesions due to stroke, arteriosclerosis or encephalitis. He has concluded that some of these are people of poor nervous heredity who subsequently develop more prominent psychic disturbances. In this regard, Alvarez mentions the cases of two sisters who suffered from thalamic syndrome.[3] I have found no other instance of the thalamic syndrome occurring in related individuals. For this reason, I have chosen to report the following rather clear-cut instances of the condition in a mother and daughter to call attention to this syndrome, which may be too little appreciated.

Case Report

Some years ago I was summoned for consultation regarding a patient in the hospital for a minor illness and who had developed a skin rash while there. I approached the consultation with misgivings, because I knew of the patient's reputation for a quick and violent temper and I anticipated a bad time. Nor was I to be disappointed. As I introduced myself, the lady went into a towering rage. She screamed that I had caused her a terrible headache, and she refused to be examined insisting that she was uncomfortable enough without being pawed over further. I managed enough professional composure to see me through an awkward situation and left the room happier than when I entered.

A few minutes later, I was asked to see the patient again, this time being assured that I would be more graciously received. Although less than a half-hour had elapsed, the lady was now composed and charming, apologetic and altogether helpful. This was such an amazing transformation that I undertook to inquire further into the matter, feeling sure that such unreasonable behavior must be backed by an interesting history.

After we had discussed the problem of the skin rash (the patient continuing to be very pleasant), I asked what provoked the outburst a few minutes be-

The thalamic syndrome is one which produces symptoms affecting a single side of any portion of the body. It is a well-defined but little-appreciated entity which is often missed during the search for specific organ pathology located at the site of the symptoms. The case report concerns the rare instance of the syndrome being found in a mother and daughter. Doctor Wooldridge is in the private practice of dermatology, Consultant to the University of Missouri School of Medicine and Visiting Lecturer to the University of Oklahoma School of Medicine.

fore. The question now brought on a torrent of remorse. The lady said that she was very upset at being in the hospital and the thought of seeing another doctor had immediately caused her head to hurt. She added that she had such headaches, always on the right side, when she was under tension or in unpleasant circumstances. She had received much ineffective treatment for migraine. She denied any sort of pre-migraine aura and insisted that these headaches could begin in an instant and would terminate just as quickly when the source of nervous tension was removed. Further questioning revealed that, for several years, the right side of the face had been extremely sensitive to heat and that hot water, which would be easily tolerated on the opposite side, would be intolerably uncomfortable on the affected side. The referring physician was unable to elicit any other hyperesthesias but confirmed the discomfort of heat applied to the entire right side of the head.

Additional and equally unexplainable symptoms of long duration were paroxysms of pain in the right chest, sudden episodes of pain and weakness in the right leg and occasional involuntary movements of the right leg. These also appeared when she was upset. None of the symptoms had been progressive or associated with any neurological findings during the course of several medical examinations. In a subsequent conversation with one of the family, I learned that these complaints had served to keep a docile husband and seven children in line. All of them knew that disagreement or disobedience brought on the terrible pains and sometimes caused the patient to fall because of weakness of the leg. One such fall had caused a scalp laceration and another an injury to the right knee.

Following this hospital incident, I saw the patient no more and had given no further thought to the matter until eight years later when I was visited in the office by her daughter. This young woman had developed psychogenic urticaria on the day that her maid left without notice, while the house was partially flooded by faulty plumbing and two of her children were ill.

When these crises passed, the patient calmed and the urticaria cleared, the lady then began to talk of her poor physical state. This had caused her much discomfort since marriage and had not been bettered by the examination and treatment of three of my competent colleagues.

Her history revealed that she had been in excellent health earlier in life and had taught school briefly, but felt unsuited for teaching because she lacked the necessary patience with children. She then married because she had an opportunity to make a good financial match, although she felt no particular affection for her husband. Four children arrived in quick succession and she then began to feel the same shortness of temper that had caused her to give up teaching. At that time her health began to decline and history to repeat itself.

Headaches plagued her, always on the right side, always related to nervous tension and never relieved by treatment for migraine. An electroencephalogram was interpreted as normal. An appendectomy was done and repeated gallbladder studies made because of right-sided abdominal pain, but the pain continued at intervals and was unchanged. One episode of cramping pain on the same side resulted in a genitourinary examination interpreted as normal. These abdominal pains always occurred when the patient was excited or unhappy. The right arm and right leg sometimes would ache or hurt when the patient was in crowds or perturbed. At such times she noted that pinching the skin on the affected side was much more painful than on the opposite side. I was not able to confirm this because I never saw the patient under conditions of such stress. Neither could I determine any unilateral difference in tactile sensibility, pain sensibility or pressure pain. Throughout the six years of symptoms, which had continued undiminished to the time of writing, there were never complaints referrable to the left side of the body.

This patient was intelligent enough to realize that her troubles arose when she was discontented and particularly when she accompanied her husband on business trips and became worried about the children at home. She had convinced herself that the symptoms were brought on by "nerves," but she would be reassured only for a short while by normal examinations. In general, she presented the picture of a person made miserable by complaints she realized to be imaginary but, at the same time, was unable to cope with. In this respect, she differed from her mother, who either never realized the functional nature of her weak right side or who never admitted it for she imperiously used her pain and weakness as a club over her family.

COMMENT

Coming from the pen of a dermatologist, I realize this may be subject to criticism and that an experienced observer in this field of medicine may contribute a more valuable study. I doubt, however, that the opportunity often arises for recording two instances of thalamic syndrome within one family.

In his books, *The Neuroses*[3] and *Practical Leads to Puzzling Diagnoses*,[4] Alvarez speaks of the thalamic syndrome and calls attention to the fact that it is a well-defined but little-appreciated entity, all too frequently missed during the search for specific organ pathology located at the site of symptoms. In a personal communication,[5] Alvarez refers to more bizarre symptoms, such as pain on one side of the vagina so intense as to make sexual intercourse difficult and cases in which one-half of the head was sensitive enough to prevent washing the hair.

In neither of the patients reported in this paper had the diagnosis of thalamic syndrome been entertained. Interestingly, however, there was general agreement on the diagnosis when the histories, covering periods of years, were discussed in retrospect.

SUMMARY

The thalamic syndrome is one which gives rise to symptoms affecting only a single side of any portion of the body. It may arise as a result of a lesion in the optic thalamus or may occur in psychic disturbances.

In this report, an extremely rare instance of the thalamic syndrome occurring in a mother and daughter is related.

A brief appreciation of the thalamic syndrome entity is presented.

Acknowledgement is made to Walter C. Alvarez, M.D. for his advice in the preparation of this article.

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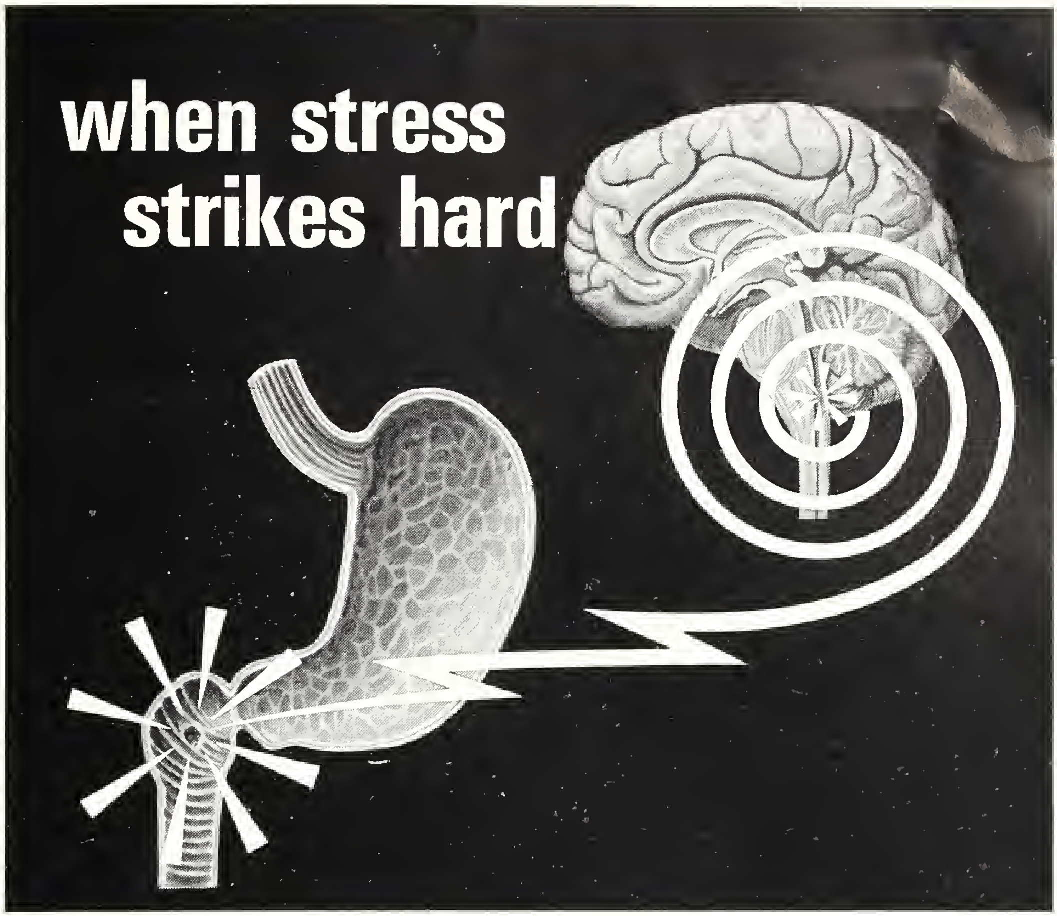
"I have had three personal ideals. One is to do the day's work well and not bother about tomorrow. It has been urged that this is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effect. To it, more than to anything else, I owe whatever success I have had—to this power of settling down to the day's work and trying to do it to the best of one's ability, and letting the future take care of itself. The second ideal has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care. And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came—to meet it with the courage befitting a man.

"I have made mistakes, but they have been mistakes of the head; not of the heart. I can truly say, and I take upon myself to witness, that in my sojourn among you:

"I have loved no darkness
Sophisticated no truth,
Nursed no delusion,
Allowed no fear."

Sir William Osler, May 2, 1905



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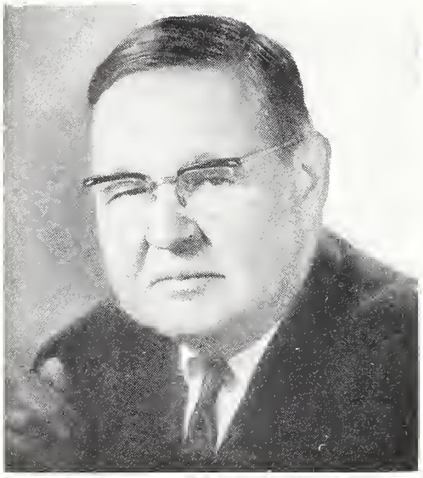

Paul R. Whitener, M.D.

President's Message

The Missouri Medical Political Action Committee (MMPAC) is undergoing a period of "agonizing reappraisal." Dr. Ralph Perry, who headed the organization from the time of its inception three years ago, has resigned apparently with a feeling of complete frustration at the lack of interest among Missouri physicians. We understand Doctor Perry's feeling, but sincerely regret his decision to resign. His personal effectiveness has been demonstrated by the MMPAC support which he generated among his own colleagues in the Kansas City area. Greene County doctors also responded to his call, but MMPAC efforts through most of the remainder of the state met with discouraging apathy and lack of interest.

The new Chairman of MMPAC is Dr. Thompson E. Potter of St. Joseph. New faces have been added to the Board of Directors. Your Association Council is now represented officially on that Board. Hopefully, these changes will breathe new life into MMPAC; but the real life of this or any other organization resides in the individual member or potential member.

This is an "off" year, so far as political activity is concerned. It should be an ideal time for each physician to examine his personal relationship and his profession's relationship with society in general. Those relationships are being altered constantly by political and legislative forces, and the only way the individual can have any voice in guiding those alterations is through collective action. MMPAC offers that opportunity.

I urge each member of Missouri State Medical Association to examine this problem objectively and realistically. I hope that after such examination the officers of MMPAC will be inundated by membership applications and pledges of support!

Paul R. Whitener M.D.

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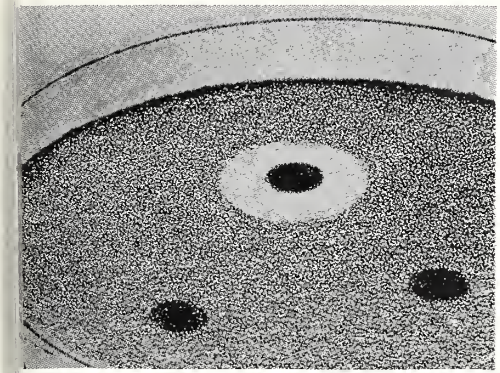

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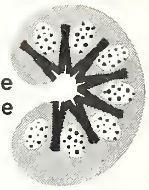

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References: (1) Carroll, G.: Urologists' Letter Club, June 1, 1964. (2) McDonald, D. F., and Short, H. B.: Address to the Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, New York, Oct. 26-28, 1964.

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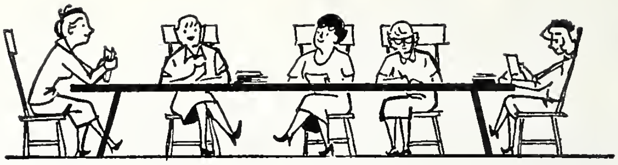
Woman's Auxiliary



Hello again! I'm still glowing from the warmth of your smiles and your kind words—both at convention and in the notes I have received since! Thank you so much for both!

As I expected, the St. Louis County Auxiliary members did themselves proud with the beautiful decorations, delicious food, fine entertainment and smooth planning! Hats off to you all, and our grateful praise for a job well done!

Mrs. R. W. Bohnsack

For the information of those of you who did not attend, our Quarterly Bulletin name contest prize (a beautiful silver bowl) went to Mrs. Pugh Haynes of St. Louis for her suggestion —*RX Auxiliary News!* Our state publication will take wings under this new banner with the June issue! Watch for it and read it from cover to cover. Lenore Fitzgerald and her staff are doing a fine job.

Congratulations to our new officers and directors who were elected to serve the next year, and to our appointed committee chairmen, parliamentarian and corresponding secretary. May we all, as Esther Bauman said in her clever installation service, work together in harmony and make beautiful music this year in the life of our Auxiliary.

The new members of our Advisory Council are Dr. Leonard T. Furlow of St. Louis, Dr. Hector Benoit of Kansas City, and Dr. Joseph L. Fisher of St. Joseph. We greatly appreciate their serving on the Council, and are proud of the continued support of MSMA. Our reception for Betty Sutter in New York on June 23, when she becomes our National President, will be a united affair with both our Auxiliary and the MSMA contributing and participating. We are most grateful for their cooperation.

Charming Merline McLain, President of Butler-Ripley-Wayne, was at our post-convention Board meeting to issue the invitation for our Fall Conference to be held at the Holiday Inn in Poplar Bluff, October 20-21. We appreciate their kindness and will strive for 100% attendance of the Board members as well as others. I'm sure they will plan to make this a wonderful meeting and I shall strive to plan a most worthwhile program.

Congratulations to Grand River for winning the cup two years in a row, and to the others who ran close seconds! And congratulations to Jackson County and Grand River for their outstanding contributions to AMA-ERF. Missouri is ahead in our membership bracket right now and I'm hoping our final tabulation will bring us National recognition in New York. County Achievement Awards will be given as well as an Award of Merit to the states.

Our new Corresponding Secretary is Mrs. B. D. Howell, Rt. No. 1, St. Catherine, and our new Recording Secretary is Mrs. Henry Durst, No. 1 Ivy Lane, Fulton. Please get your lists of officers and chairmen to them and to me immediately, if you have not already done so. The new stationery and Rosters will be sent to the Board members as soon as they are printed.

I am looking forward to serving as your President this year and shall strive to serve you to the best of my ability and to justify the confidence you have placed in me.

I hope to see many of you in New York, June 20-24, to help me toast our new National President from Missouri—Mrs. Richard A. Sutter! Have fun!

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EDITORIALS

A PATH AND ITS PITFALL

The greater part of medical research of the last ten years has been devoted to the laboratory approach to illness rather than the clinical. This has not been altogether healthy for medicine, for a complication of this state of affairs has been a widening breach between the physician in practice and the physician in research, the latter usually representing a teaching institution.

The technical advances of these ten years have been tremendous, and it is not realistic to advocate that the tools thus made available not be used, but it is equally unrealistic to make broad assumptions that human illness can be reduced to the manipulation of mechanical gadgets. It is a failing of the human mind that the thinking process under those circumstances becomes also mechanical, once the leavening of consideration for the illness of a fellow man is somewhere lost beneath all the equipment.

This aseptic approach to medical research in our institutions has resulted in reams of reports so sophisticated that they are of use only in other institutions, thereby bypassing the great legion of medical men who live with patients every day. I do not mean to belittle this pure research, except to the extent that it encroaches upon and replaces that which is applicable to human disease. But such does occur, and we must thus beware that the availability of new techniques, and the awesome laboratories in which they are used, not preoccupy us so completely that medicine becomes split into one camp representing the professor and another the practitioner. The implications of such a division are at once obvious, especially in these times so perplexing for medicine.

This trend to purely laboratory science is nowhere more evident than in one of our dermatologic journals which has been undergoing a gradual dessiccation of spirit in the decade past. Formerly, I found myself referring, time after time, to key reports in that journal, reports which would aid me with my problems of practice. Those pages are well-worn and I love the articles and their wisdom as I love old friends. There was little love wasted, however, on the November 1964 issue of that same journal which led off with "Experiments in the Sweating on the Palms of the Green Monkey" and proceeded with more and more of the same until I came to "The Direct Effect of ACTH on the Rat Preputial Gland." Both of these projects were accomplished under grants from the National Institutes of Health. I have no argument with them except that they should have appeared in a journal of comparative zoology; this particularly, when the society publishing the journal would be out of business without the practicing physician to support it.

Neither has this trend been limited to publications. Indeed, the publishing of such oblique medical articles is only a reflection of where the interest all too frequently lies in our schools of medicine. A good example recently occurred in one of our more prominent schools when the professor of medicine showed commendable vigor in arranging with a great foundation for almost a half-million dollars to endow a chair of dermatology. Once that was accomcomplished, the professor then hired an immunologist and installed him as professor of dermatology, despite the fact the man could not have diagnosed a case of scabies on a clear day. He was then expected to administer a group of volunteer clinicians, and the avowed purpose of the department was the training of young men in dermatology. The result was exactly what a child might expect; internecine revolt, which set the department back several years, but not until the "Precipition Reactions of the Golden Hamster in a Cold Chamber," or some such piffle, had been thoroughly studied.

I do not presume to chart a path for medical research. I am neither qualified by training nor by mental capacity to do so. But not for a moment do I doubt that a great deal of medical research funds are being foolishily expended, one consequence being that the concentration of interest in our teaching institutions too seldom lies in the training of the young men on whom we must depend tomorrow to heal our sick.

WILFRED E. WOOLDRIDGE, M.D.
Editor
Bulletin of the Greene County
Medical Society

". . . TO TALK OF MANY THINGS"

Let us talk of the violence and cannibalism in the Congo which recently have shocked the civilized world. It is not a welcome subject. Yet, despite the abhorrence which the very mention of such subjects might evoke, some discussion may be appropriate.

Man's progress through time has been slowed by his struggle against his environment and himself. Fear of the unknown, ever-present hunger, strangers and death all were part of his daily fare until some sense of security was finally achieved through acceptance of rules of behavior, codified into law and religion. To reach this goal, man passed from family into tribal groups or clans, villages, towns, cities and in successive stages into nations.

The primitive tribe-oriented people of Africa, barely beyond the stone age culture stage of development, have been thrust suddenly into the 20th Century. Massacred by white mercenaries, unable to comprehend the maelstrom created by unseen political and economic forces, they fall back to known and familiar ways of life. They put their trust in leaders who, themselves, have become pawns in a fearful and complex global conflict. Ignorance, superstition and fear are terrible weapons in the hands of those who would use them for dark purposes.

The eating of the flesh of an enemy is an ancient fetish which not too distantly was a common occurrence. The now-gentle islanders of Polynesia raided their neighbors for the purpose of feasting on "long pork." In the 13th century, it is recorded that an infuriated mob in Florence tore a man to pieces and ate him.

As for man's homicidal tendencies and cruelty to his own kind, the list is as long as history itself. The Crusaders were not above pillage, rape and massacre on their way to wrest the Holy Grail from the Heathen. These were not idolatrous savages, but supposed civilized folk who were steeped in religious lore and who knew the difference between right and wrong. These were the people who nurtured the wisdom and art of the ancients through the ages of darkness and thus preserved the fertile ground from which the enlightenment of the Renaissance could blossom.

The last two World Wars saw millions of innocents starved, gassed or slaughtered. And today, social conflict, denial of human rights, bombing of churches and murder of ministers shame our own country.

This tirade, if so it seems, is not to condone or make excuses for the practitioners of violence. Rather, it is intended to point out that beneath the facade of age-old moralities and civilized respectabilities lies a fear-ridden biped who can be led to any extreme, not only in some far off continent, but right in our own backyard.

MARK M. MARKS, M.D.
Kansas City

In Memoriam

Deweese, Everett R., M.D., Kansas City, a graduate of St. Louis University, 1917; member of Jackson County Medical Society; aged 74; died March 5, 1965.

Netherton, George F., M.D., Cameron, a graduate of the University of Colorado, 1930; member of Clinton County Medical Society; aged 61; died March 27, 1965.

Dempsey, David T., M.D., Kennett, a graduate of Emory Medical School, 1915; member of Dunklin County Medical Society; aged 72; died April 1, 1965.

Zuber, Harold V., M.D., Kansas City, a graduate of the University of Kansas, 1932; member of Jackson County Medical Society; aged 60; died April 12, 1965.

Glaser, Martin J., M.D., St. Louis, a graduate of Washington University, 1906; member of St. Louis Medical Society; aged 85; died April 25, 1965.

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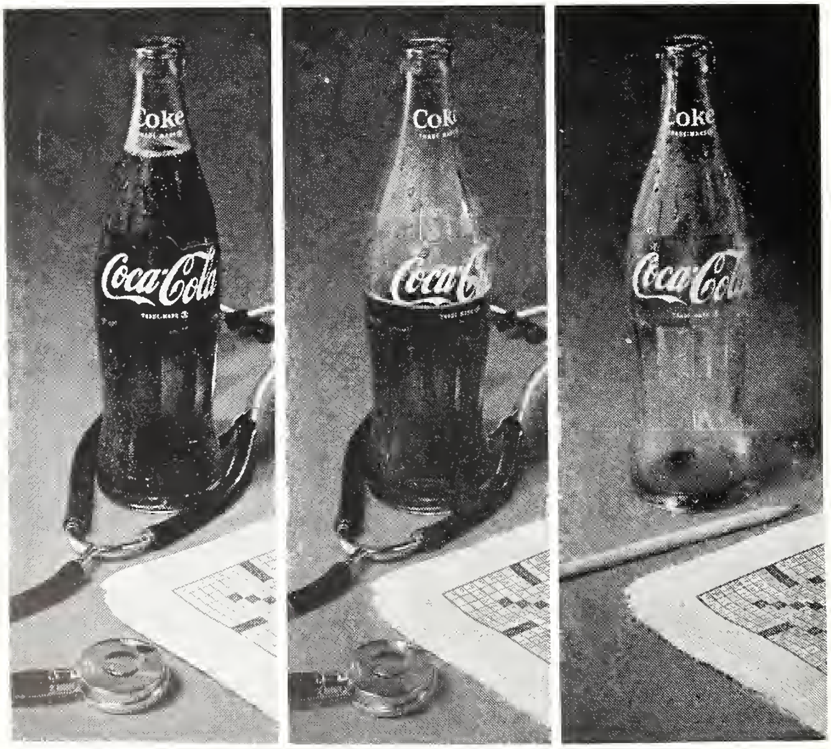

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New Members

Richard C. Arnold, M.D., 111 W. 4th St., Sedalia, has become a member of Pettis County Medical Society. Dr. Arnold is a native of Owenton, Kentucky, received his preliminary education at the University of Louisville, and his M.D. degree at the University of Louisville in 1930. He specializes in preventative medicine.

Ross D. Blades, M.D., 1211 S. Glenstone, Springfield, has become a member of Greene County Medical Society. Dr. Blades is a native of Bernie, Missouri, received his preliminary education at Washington University, and his M.D. degree at St. Louis University in 1959. He specializes in urology.

Ray A. Brinker, M.D., 510 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Brinker is a native of Iowa City, Iowa, received his preliminary education at State University of Iowa, and his M.D. degree at State University of Iowa in 1957. He specializes in radiology.

John M. Boyce, M.D., 807 Stadium Road, Columbia, has become a member of Boone County Medical Society. Dr. Boyce is a native of St. Louis, Missouri, received his preliminary education at Grinnell College, and his M.D. degree at Washington University in 1959. He specializes in pathology.

Robert W. Buben, M.D., 112 E. Patterson, Kirksville, has become a member of North Central Counties Medical Society. Dr. Buben is a native of St. Louis, Missouri, received his preliminary education at Washington University, and his M.D. degree at the University of Missouri in 1957. He specializes in general surgery.

William R. Bynum, M.D., 807 Stadium Road, Columbia, has become a member of Boone County Medical Society. Dr. Bynum is a native of Tulsa, Oklahoma, received his preliminary education at Central State College, and his M.D. degree at the University of Oklahoma in 1951. He specializes in pathology.

Michael E. Castillo, M.D., 2005 Fayette St., N. Kansas City, has become a member of Clay County Medical Society. Dr. Castillo is a native of Sullana, Peru, received his preliminary education at National University of Mayor de San

(Continued on page 480)

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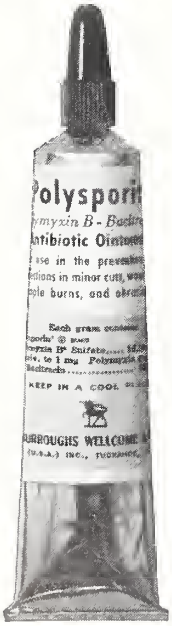

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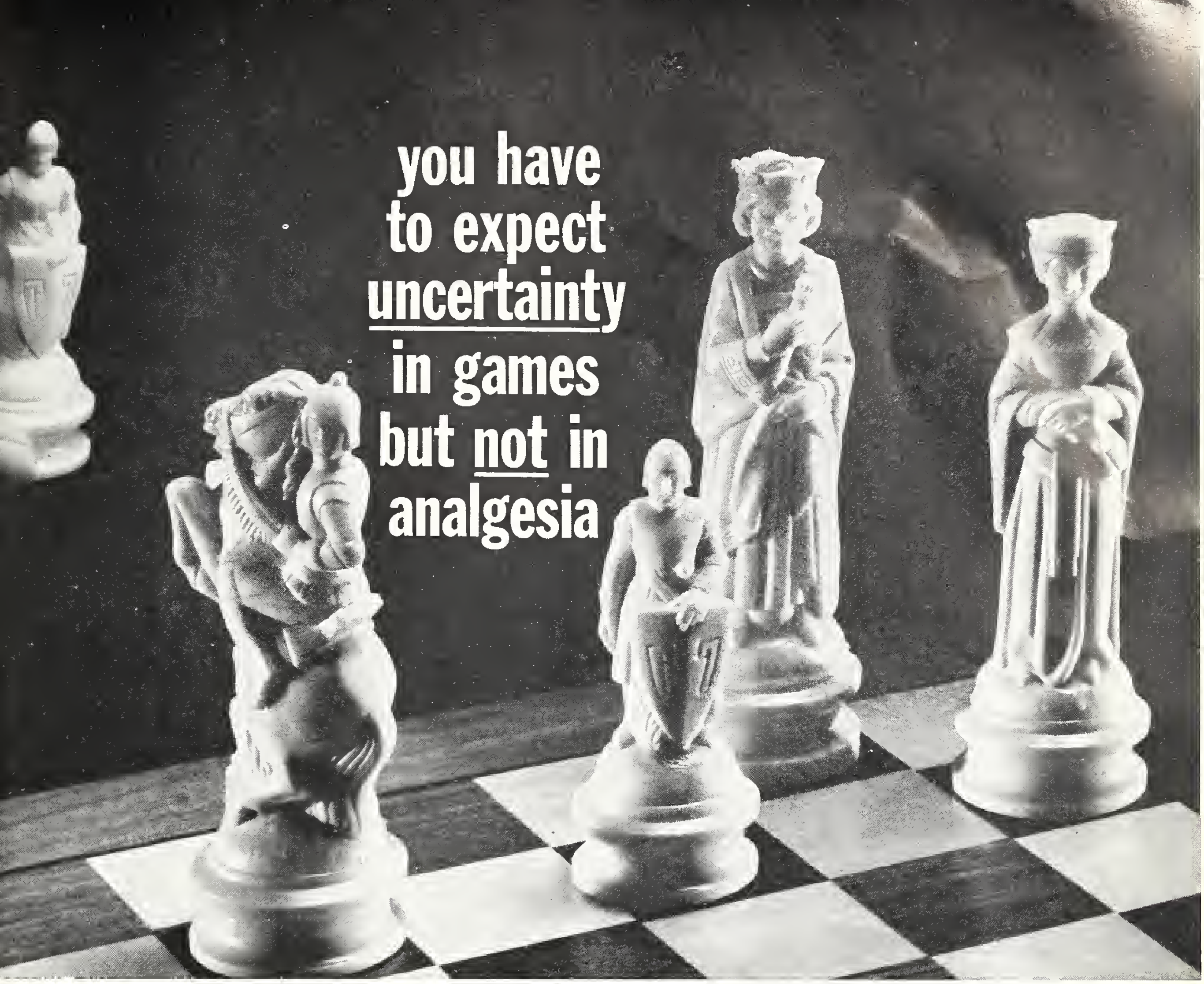

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New Members (cont'd.)

Marcos, and his M.D. degree at Facultad de Medicina, Lima, Peru in 1953. He specializes in ophthalmology.

Emile Grunberg, M.D., 5400 Arsenal St., St. Louis, has become a member of St. Louis Medical Society. Dr. Grunberg is a native of Kimpolung, Rumania, received his preliminary education at Sophien GYM, Vienna, Austria, and his M.D. degree at the University of Vienna in 1933. He specializes in psychiatry.

Raymond R. Hannas, M.D., Volker Blvd. at Brookside, Kansas City, has become a member of Jackson County Medical Society. Dr. Hannas is a native of Brunswick, New Jersey, received his preliminary education at Purdue University, and his M.D. degree at Howard University in 1950. He specializes in general practice.

Edward J. Heilman, M.D., 39th & Rainbow, Kansas City, Kansas, has become a member of Jackson County Medical Society. Dr. Heilman is a native of Kansas City, Missouri, received his preliminary education at Rockhurst College, and his M.D. degree at the University of Missouri in 1961. He specializes in internal medicine.

Richardson Noback, M.D., 24th & Cherry, Kansas City, has become a member of Jackson County Medical Society. Dr. Noback is a native of Richmond, Virginia, received his preliminary education at Columbia University, and his M.D. degree at Cornell University in 1947. He specializes in internal medicine.

Richard L. Pentecost, M.D., 220 McCoy, Kansas City, has become a member of Jackson County Medical Society. Dr. Pentecost is a native of New York, New York, received his preliminary education at George Washington University, and his M.D. degree at George Washington University in 1956. He specializes in psychiatry.

Harry E. Reynolds, M.D., 5535 Delmar Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Reynolds is a native of Glendale, California, received his preliminary education at Claremont Men's College, and his M.D. degree at Washington University in 1960. He specializes in surgery.

Tom W. Staple, M.D., 510 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Staple is a native of

(Continued on page 486)

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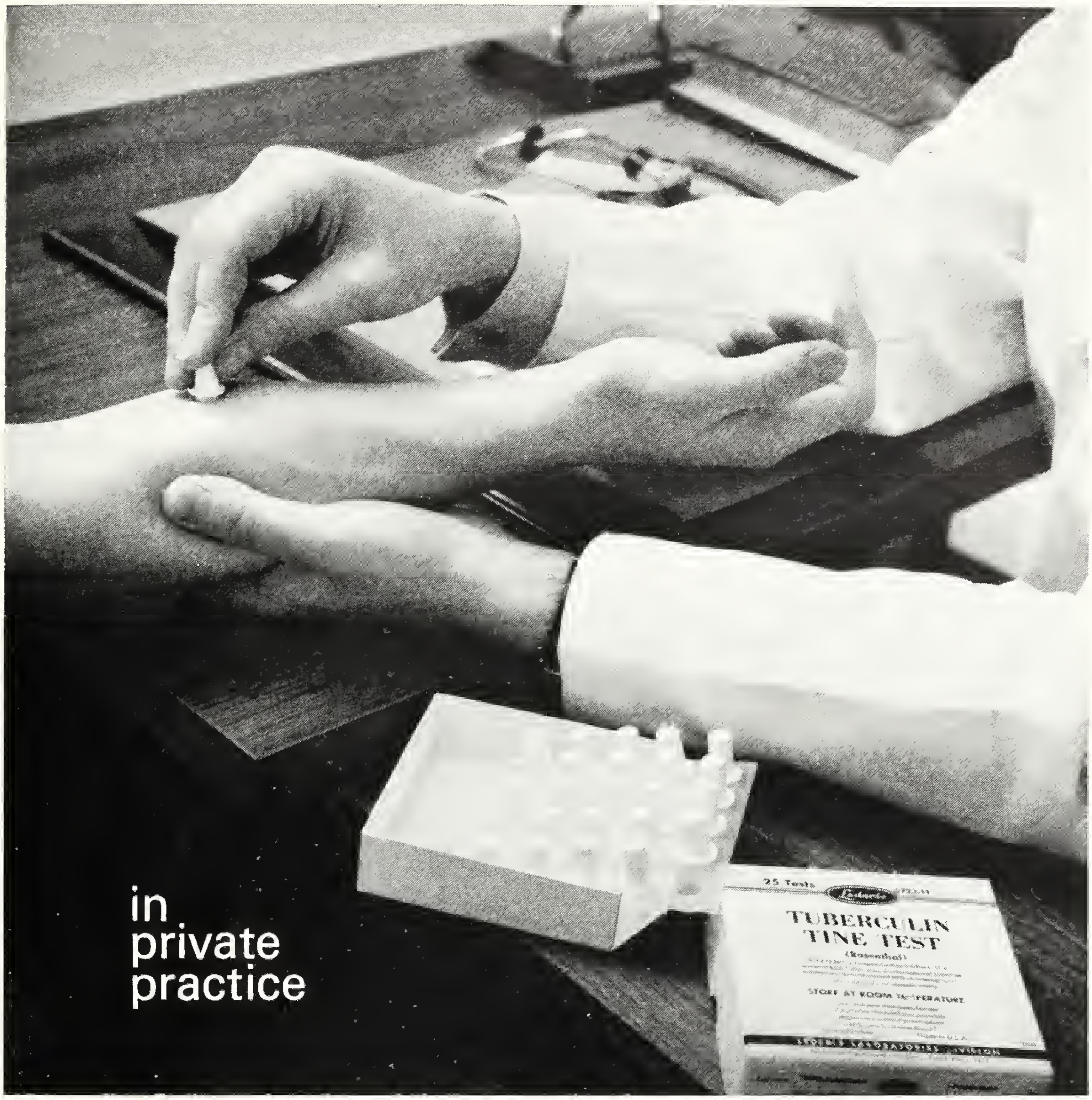
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County Society News

FIRST DISTRICT

COUNCILOR
JOSEPH FISHER, M.D., ST. JOSEPH

Grand River Medical Society

The Grand River Medical Society and Auxiliary held their regular monthly dinner meeting Thursday, April 8, 1965 at the Strand Hotel in Chillicothe with 37 members and guests in attendance.

The scientific session was "Acute Renal Failure" presented by Dr. Nathan Galloway, Assistant Professor of Medicine, University of Missouri Medical Center. The Society found this a very stimulating and practical topic.

We salute the Grand River Auxiliary which was voted the outstanding Auxiliary in the state for the second consecutive year.

Albert D. Cross, M.D., *Secretary*

Buchanan County Medical Society

Thirty-five physicians attended the annual Cancer Control program of the Buchanan County Medical Society, April 14, following a dinner in the Empire Room of Hotel Robidoux in St. Joseph. Speaker for the event was A. McChesney Evans, M.D., Chief of Internal Medicine of the Ellis Fischel State Cancer Hospital in Columbia. Dr. Evans gave a paper on, "Chemotherapy and Terminal Care of Cancer Patients."

The speaker was introduced by Charles R. Willman, M.D. Herbert C. Senne, M.D., President, presided at the meeting. Arrangements for the meeting and program were made by the Society's program chairman, Joe S. Gunter, M.D., Chairman; Richard O. Craig, M.D., and Dr. Willman.

Berwyn H. Moen, M.D., *Secretary*

SECOND DISTRICT

COUNCILOR
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

The regular monthly dinner meeting of the Chariton-Macon-Monroe-Randolph County Medical Society was held at the Woodland Hospital on Thursday night, April 8. The scientific program for the evening was given by E. A. Belden, M.D., Missouri Division of Health, Jefferson City, Missouri. Dr. Belden discussed, "Tetanus Immunization as a Public Health Measure," along with other health matters.

The President of the Society, Dr. L. E. Huber of Moberly presided at the meeting. Those present were: Dr. F. L. Harms and Dr. G. C. Rice of Chariton County; Dr. Josephine Baker, Dr. A. Rowlette, Dr. T. S. Fleming, Dr. H. Young, Dr. W. D. Chute, Dr. C. C. Cohrs, Dr. L. E. Huber, Dr. R. Hasson, Dr. P. V. Dreyer and Dr. C. C. Smith all of Randolph County, and Dr. F. Barnett of Monroe County.

Robert Hasson, M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR
ROBERT A. MAYER, M.D., ST. LOUIS

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society and the doctors' wives was held at the Southern Air in Wentzville, Tuesday evening, May 4. Following dinner the ladies retired to a separate meeting. The scientific program for the evening enjoyed by the doctors included two special films, one entitled, "A Controlled Program for Cross Infection in a Modern Hospital," and the other, "Transvaginal Regional Anesthesia in Obstetrics."

The business session of the meeting included a discussion of actions taken by the House of Delegates at the annual meeting of the MSMA, April 4-7 in St. Louis.

Gerald Yaeger, M.D., *Secretary*

NINTH DISTRICT

COUNCILOR
E. A. STRICKER, M.D., ST. JAMES

Mid-Missouri County Medical Society

A dinner meeting of the Mid-Missouri Medical Society and the doctors' wives was held Thursday night, April 22, at the Shepherd of the Hills Motel-Restaurant in Lebanon. The evening festivities began with a social hour followed by dinner and the scientific program.

The speaker for the evening was Joes Sala, M.D., Radiologist, Burge Hospital, Springfield, who spoke on "Radiation in the Treatment of Cancer." This was an interesting and informative presentation.

M. K. Underwood, M.D., *Secretary*

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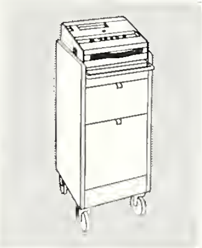

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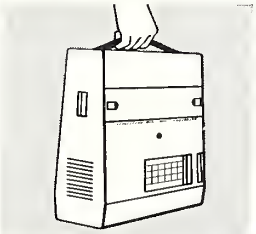

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From the Medical Schools

UNIVERSITY OF MISSOURI

"M.D. Day" at the University of Missouri Medical Center is scheduled for the weekend of October 29 and 30 to coincide with the Missouri-Nebraska football game. There are a certain limited number of room reservations and football tickets available for that game, and these will be given out on a first-come-first-served basis. Requests for reservations or tickets will only be acknowledged when accompanied by the proper forms which will be mailed in August. The requests should be sent in as soon as possible, since the supply is limited.

The Missouri Branch of the American Society for Microbiology held its semi-annual meeting in the Memorial Student Union of the University of Missouri, on April 3. Members from around the state participated in the scientific program. Dr. Norman G. Miller of the University of Nebraska was the special guest lecturer and presented a talk on "Electron Microscopic Observation of the Liver and Kidney of Hamsters Infected with *Leptospira pomona*."

George Emery, M.D., D.P.H., from the Department of Social Medicine, University of Otago, Dunedin, New Zealand, was a visitor in the Department of Community Health and Medical Practice March 24 through 27. Dr. Emery has been in general practice in New Zealand and was recently awarded a W.H.O. Exchange of Research Worker's Grant to visit people who are doing research in general practice in the United States, England, Israel and Yugoslavia. While in the United States Dr. Emery visited three cities: Boston; Columbia, Mo.; and San Francisco.

Dr. Edward A. Holyoke, chairman of the Department of Anatomy, College of Medicine, University of Nebraska, visited the Department of Anatomy at the University of Missouri on April 6. Dr. Holyoke is on the planning committee for a new Basic Science Building at the University of Nebraska and he was given a complete tour of the Anatomy area here and copies of the building plans.

ST. LOUIS UNIVERSITY

A portrait of Dr. Edward A. Doisy, Sr., Director of the Edward A. Doisy Department of Biochemistry, was presented to the *nobel laureate* at a reception sponsored by former students at the Federation Meetings in Atlantic City. Rev. Bernard T. Schuerman, S.J., Vice President of St. Louis University, was present.

Dr. Leo Senay, Jr., associate professor of physiology, has been awarded a research development award by the United States Public Health Service for a five year period.

Dr. Robert Dean Mattis, executive secretary, Department of Ophthalmology, assumed office as President of the Missouri Ophthalmological Society at a Spring meeting held at the Chase-Park Plaza Hotel.

Dr. Armand E. Brodeur, associate professor of radiology, has been appointed by the United States Public Health Service to serve as an Advisory Committee on Medical X-ray Protection.

WASHINGTON UNIVERSITY

Dr. Samuel B. Guze has been named assistant to Dr. M. Kenton King, dean of Washington University School of Medicine, St. Louis. Dr. Guze is professor of psychiatry and associate professor of medicine at the School. As assistant to the dean, he will serve on the executive faculty and as an advisor to the dean on medical school policies.

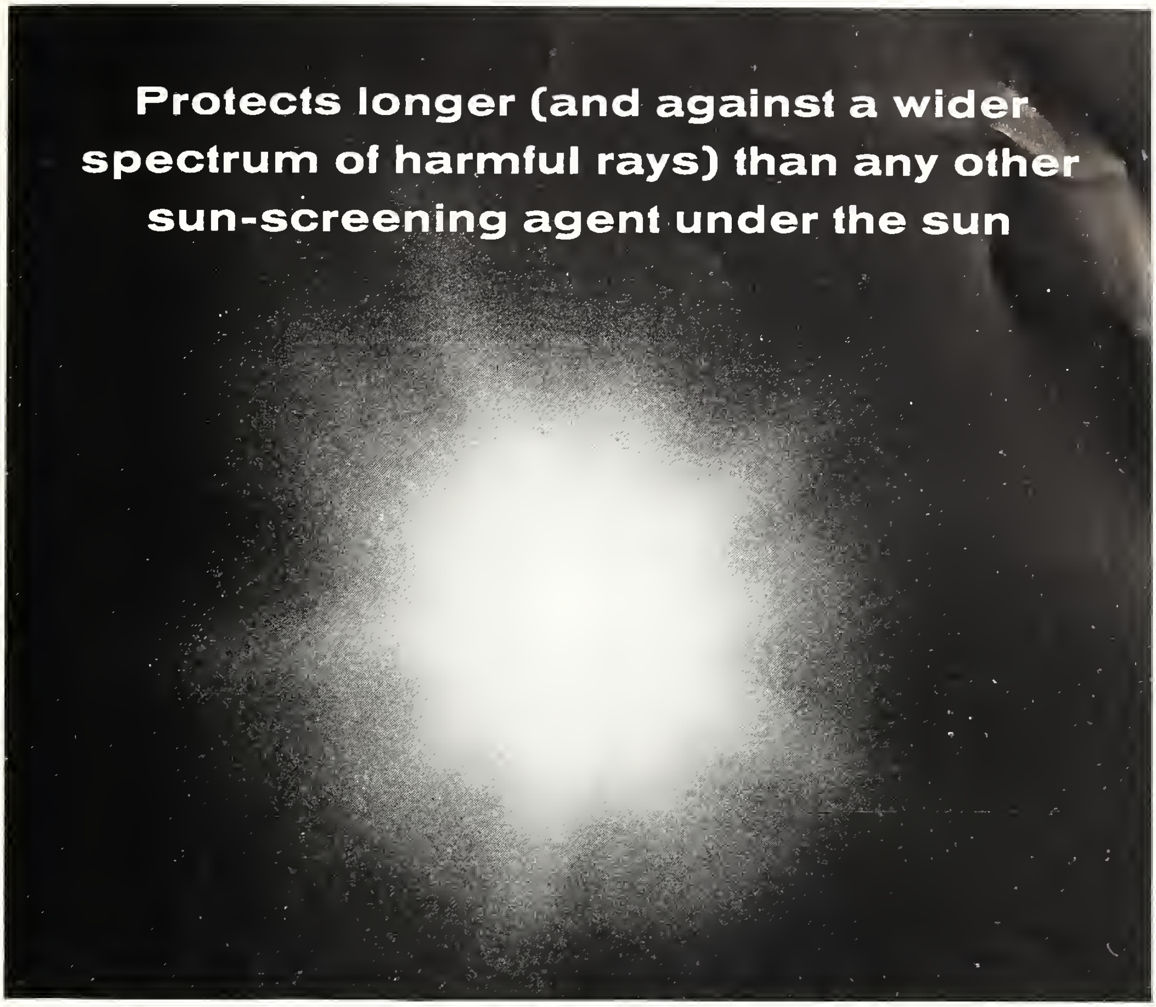
Dr. Guze is a 1945 graduate of the School and has been a member of the full-time faculty since 1951. He holds certification from both the American Board of Internal Medicine and the American Board of Psychiatry.

The first Harry Alexander Visiting Professor of Medicine was in residence in April at Washington U. School of Medicine. Dr. Jan G. Waldenstrom, professor and head of the department of medicine at the University of Lund at Malmo, Sweden, participated in the teaching program of the department of medicine.

Dr. Waldenstrom, an authority on blood pigments and blood proteins, received his M.D. degree at the University of Uppsala, Sweden.

New laboratory space for the division of cardiology was recently dedicated honoring the Calegero and Rosalia Rallo family and friends. Matching funds for the construction of the laboratory area were obtained through the efforts of the Rallo family and Dr. Edward Massie, associate professor of clinical medicine. A $48,854 grant from the U. S. Public Health Service awarded in September 1963 was also used in the construction. Total cost was approximately $100,000.

The area will house four labs devoted to research on the heart and its function. The addition adjoins present division offices on the eighth floor of Wohl Hospital. Now in operation are two of the laboratories where studies are underway on the chemistry of the heart muscle and heart physiology.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New Members (cont'd.)

Hamburg, Germany, received his M.D. degree at the University of Illinois in 1955. He specializes in radiology.

Charles G. Thierauf, M.D., 4323 S. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Thierauf is a native of St. Louis, Missouri, received his preliminary education at St. Louis University, and his M.D. degree at St. Louis University in 1958. He specializes in radiology.

Lee H. Vensel, M.D., 600 S. Glenstone, Springfield, has become a member of Greene County Medical Society. Dr. Vensel is a native of Glasgow, Kentucky, received his preliminary education at the University of Kentucky, and his M.D. degree at the University of Louisville in 1953. He specializes in pediatrics.

David A. Vermeire, M.D., 10 Richards Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Vermeire is a native of Farrell, Pennsylvania, received his preliminary education at the University of Pittsburgh, and his M.D. degree at the University of Pittsburgh in 1954. He specializes in aviation medicine.

Irving Weigensberg, M.D., 510 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Weigensberg is a native of Newark, New Jersey, received his preliminary education at Washington University, and his M.D. degree at Washington University in 1956. He specializes in radiology.

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WANTED—Certified or Board eligible internist for large medical group; salary $15,600-$18,000; eligible for partnership after two years; Contact Ross-Loos Medical Group, Rm. 200, 947 West Eighth Street, Los Angeles, California.

PEDIATRICIAN WANTED—Eight man multi-speciality group located in suburb of large midwestern city needs young pediatrician. Complete X-ray and laboratory facilities, opportunity for academic affiliation with two medical schools. $16,000 base salary plus percentage of profits first year, full partnership after three years. Contact Box 315, c/o Missouri State Medical Association, 634 North Grand Blvd., St. Louis, Mo. 63103.

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WANTED—General Practitioner for large medical group; salary $15,000-$16,800; eligible for partnership after two years; Contact Ross-Loos Medical Group, 947 West Eighth Street, Los Angeles, California.

FOR SALE, RENT OR LEASE—Doctor or doctors interested in locating in Rolla, Missouri. Nine-room office, furnished with X-Ray, Dark Room, Laboratory and other equipment. Full staff privileges available at the Phelps County Memorial Hospital. For further information contact Eva L. Cottingham, 924 West Tenth Street, Rolla, Missouri.

WANTED—ECG machine. Small, late model electrocardiograph. Contact Box 317, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

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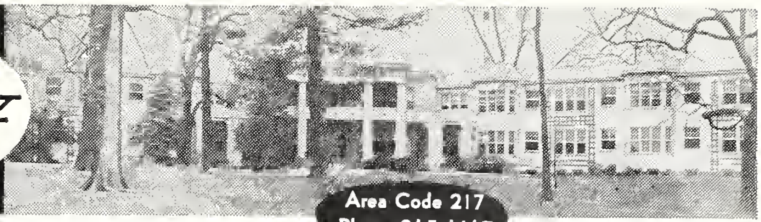

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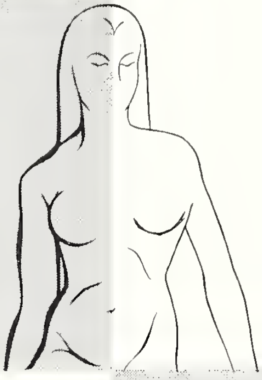

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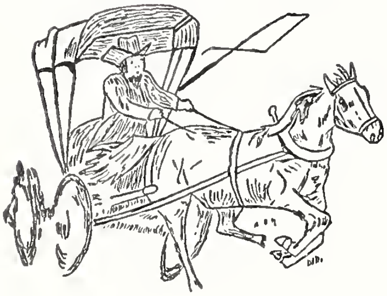


FORTY YEARS AGO

Members from all sections of the state attended the 68th annual meeting of the Association in Kansas City, May 5-6-7, and numerous comments were freely expressed, praising the session as probably the most successful that we have ever held. The clinical sessions at the General Hospital attracted large numbers of members and all of them praised the character of the work done. After a full and free discussion that lasted several hours, a motion was passed increasing the dues from $5 to $8, beginning January, 1926. The Association was honored by the presence of two guests, Dr. Morris Fishbein, editor of the *Journal of the A.M.A.* and Dr. John M. Dodson, secretary of the Bureau of Health and Public Instruction of the A.M.A.—The Woman's Auxiliary held its first annual meeting and more than one hundred members registered.—The House of Delegates adopted a resolution addressed to President Coolidge and the Secretary of the Treasury, asking for relief from the war tax under the Harrison Narcotic Act and for the right to deduct from income tax any money expended in attending medical society meetings and doing postgraduate work. The election of Dr. Emmett P. North, of St. Louis, as president for the ensuing year, was a popular choice. The number registered was 505, which exceeds the largest registration of any previous meeting.

On Tuesday, May 19, Dr. Fred W. Bailey, president of the St. Louis Medical Society, turned the sod that started the construction of the magnificent new structure which the Society will erect on Lindell Boulevard just west of the Moolah Temple.

The Jackson County Medical Society is preparing to move into its new quarters in the Medical Arts Building at Kansas City. This building was erected for the special use of physicians and dentists.

TWENTY-FIVE YEARS AGO

Dr. Robert B. Denny, Creve Coeur, was elected President-Elect of the Missouri State Medical Association by the House of Delegates at the Joplin Session, April 29-30 and May 1. Dr. James R. McVay, Kansas City, opened the session of the House and presided at the scientific sessions. Dr. M. Pinson Neal, Columbia, was elected Speaker of the House and presided at the meetings of that body. Dr. Cyrus E. Burford, St. Louis, was installed as President; Dr. Walter Baumgarten, St. Louis, was reappointed Editor; Dr. Ralph L. Thompson, St. Louis, Treasurer, and Mr. E. H. Bartelsmeyer, St. Louis, Executive Secretary.

The American Medical Association will convene for the 91st Annual Session in New York, June 10 to 14. Most of the Session's events will be held in the Waldorf-Astoria.

Dr. A. R. McComas, Sturgeon, was honored on the occasion of his 50th anniversary in the practice of medicine, at a picnic sponsored by the Boone County Medical Society at The Pinnacles, Boone County, on May 22.

TEN YEARS AGO

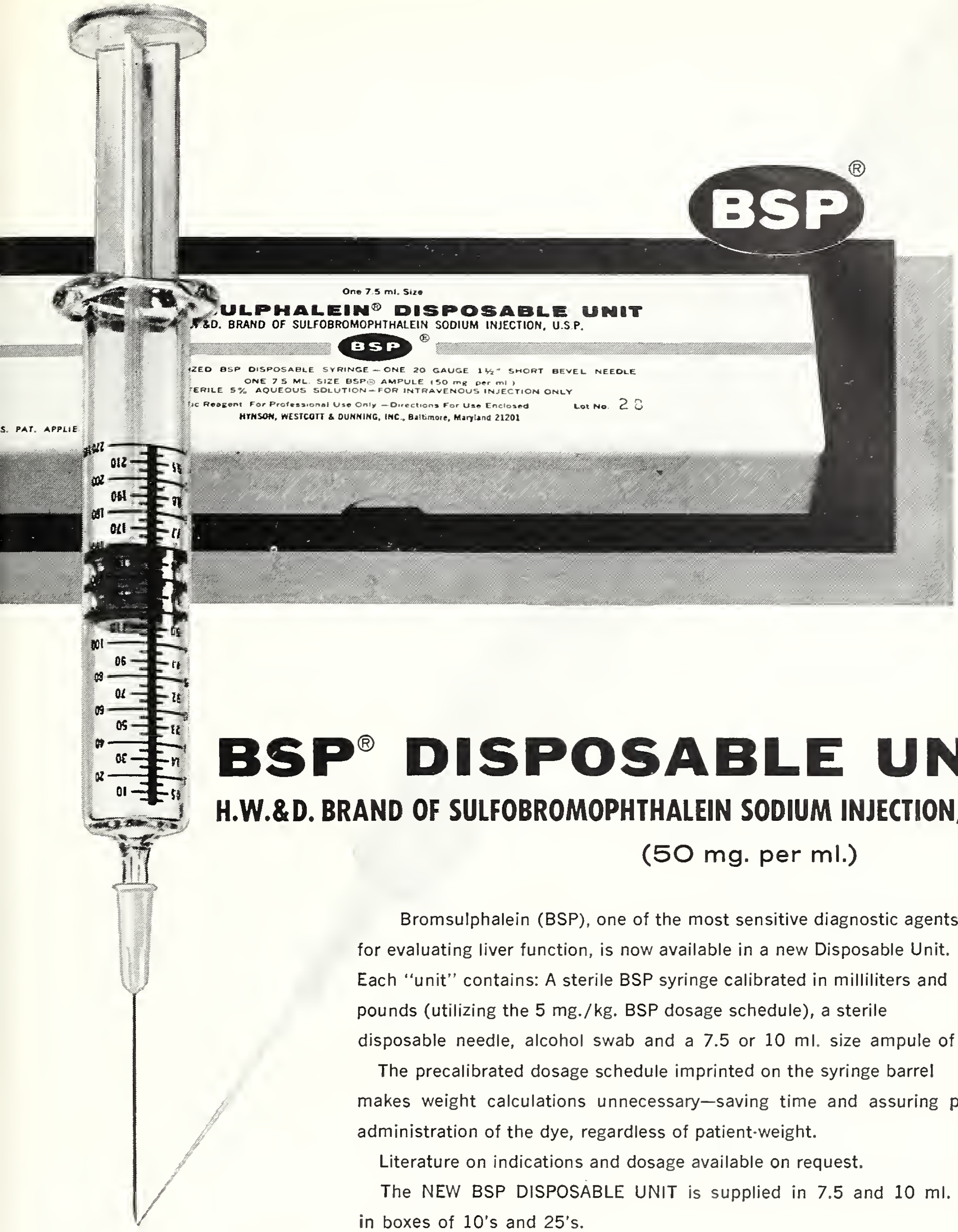
The American Association of Railway Surgeons has installed Richard A. Sutter, M.D., St. Louis, as president.

Reelected to the Springfield city council, C. Souter Smith, M.D., Springfield, retired from medical practice on May 1 and will devote her time to civic affairs. She will retain her affiliation with medical organizations.

The March 29 issue of the *Lexington Advertiser News* was a special issue in honor of the fifth anniversary of the Lexington Memorial Hospital.

On his 81st birthday, and commemorating 50 years of practice, J. Lee Harwell, M.D., Poplar Bluff, was presented a silver tray by the Butler County Medical Society "for 50 years Humanitarian Service to the Community."

Director of postgraduate instruction for the Fifth Inter-American Congress of Radiology, meeting in Washington, D. C., and C. Edgar Virden, M.D., Kansas City.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MISSOURI STATE MEDICAL ASSOCIATION

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Telephone: Jefferson 1-0404

OFFICERS

President, Paul R. Whitener, M.D., St. Louis
President-Elect, Byron M. Stuart, M.D., Boonville
Vice President, Charles S. Sherwin, M.D., St. Louis
Vice President, Roy W. Pearse, M.D., Nevada
Vice President, Harold W. Miller, M.D., Willow Springs
Secretary, John I. Matthews, M.D., Jefferson City
Treasurer, Walter T. Gunn, M.D., St. Louis
Speaker, Stanley S. Peterson, M.D., Springfield
Vice Speaker, Paul F. Max, M.D., St. Louis
Executive Assistant, Thomas P. Fox, St. Louis
Field Secretary, Raymond McIntyre, St. Louis
Executive Secretary, T. R. O'Brien, St. Louis
Administrative Assistant, Allen D. Smith, St. Louis

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Durward G. Hall, M.D., Springfield
J. Loren Washburn, M.D., Versailles
A. W. Neilson, M.D., St. Louis
Richard H. Kiene, M.D., Kansas City
Alternate, J. H. Summers, M.D., Lebanon
Alternate, Thompson E. Potter, M.D., St. Joseph
Alternate, Robert Kelley, M.D., St. Louis
Alternate, Hugh E. Stephenson, Jr., M.D., Columbia

COUNCILORS

Hector W. Benoit, Jr., M.D., Kansas City, *Chairman*
David N. Kerr, M.D., St. Louis, *Vice-Chairman*

1st District, Joseph L. Fisher, M.D., St. Joseph
2nd District, Lysle M. Bach, M.D., Hannibal
3rd District, David N. Kerr, M.D., St. Louis
4th District, Robert A. Mayer, M.D., St. Louis County
5th District, James C. Cope, M.D., Columbia
6th District, Rolla B. Wray, M.D., Nevada
7th District, Hector W. Benoit, Jr., M.D., Kansas City
8th District, Doyle C. McCraw, M.D., Bolivar
9th District, E. A. Stricker, M.D., St. James
10th District, W. D. English, M.D., Cardwell

Minutes of the
107th Annual Session

MISSOURI STATE MEDICAL ASSOCIATION

House of Delegates

Chase-Park Plaza Hotel St. Louis

April 4-7, 1965

FIRST SESSION

Sunday, April 4

The First Session of the House was called to order at 1:30 p.m. in the Chase Club with Stanley S. Peterson, M.D., Speaker, presiding. The following officers, councilors and delegates were present during the 107th Annual Session:

Officers

President	Leonard T. Furlow, M.D., St. Louis
President-Elect	Paul R. Whitener, M.D., St. Louis County
Vice-President	Ben M. Bull, M.D., Ironton
Vice-President	Edgar W. Davis, M.D., St. Louis
Secretary	John I. Matthews, M.D., Jefferson City
Treasurer	Charles R. Doyle, M.D., St. Louis
Speaker of the House	Stanley S. Peterson, M.D., Springfield
Vice-Speaker of the House	Paul F. Max, M.D., St. Louis

Councilors

1st District	Joseph L. Fisher, M.D., St. Joseph
2nd District	Lysle M. Bach, M.D., Hannibal
3rd District	David N. Kerr, M.D., St. Louis
4th District	Paul H. Rother, M.D., St. Charles
5th District	Byron M. Stuart, M.D., Boonville
6th District	Rolla B. Wray, M.D., Nevada
7th District	Hector W. Benoit, Jr., M.D., Kansas City
8th District	Doyle C. McCraw, M.D., Bolivar
9th District	E. A. Stricker, M.D., St. James
10th District	W. D. English, M.D., Cardwell

DELEGATES

First District

Andrew	F. C. Long, Savannah
Buchanan	John N. Martin, St. Joseph
Buchanan	Richard V. Riddell, St. Joseph
Clay	Reinhardt D. Dwyer, North Kansas City
Clay	Donald E. Kuenzi, Kansas City
Clinton	P. T. Luckenbill, Plattsburg
Grand River	
Grundy	Albert D. Cross, Trenton
Linn	John R. Dixon, Brookfield
Livingston	George Mandler, Chillicothe
Northwest	
Nodaway	Robert E. Dunshee, Maryville
Gentry	Bernie Parsons, Albany
Worth	Frank Matteson, Grant City
Platte	Sam Allen, Kansas City

Second District

Chariton-Macon-Monroe-Randolph	F. L. Harms, Salisbury
Chariton-Macon-Monroe-Randolph	James E. Campbell, Macon
Chariton-Macon-Monroe-Randolph	F. A. Barnett, Paris
Chariton-Macon-Monroe-Randolph	A. P. Rowlette, Moberly
Lewis-Clark-Scotland	Landis Y. Davis, Canton
Marion-Ralls-Shelby	Philip Foreman, Hannibal
North Central	
Adair	Robert Buben, Kirksville
Knox	Francis Tarvydas, Edina
Pike	Charles Lewellen, Louisiana

Third District

St. Louis City	Malcolm D. Bawell, St. Louis
St. Louis City	John Berry, St. Louis
St. Louis City	Richard Bradley, St. Louis
St. Louis City	Charles R. Doyle, St. Louis
St. Louis City	Walter T. Gunn, St. Louis
St. Louis City	John P. Eberle, St. Louis
St. Louis City	Joseph C. Edwards, St. Louis
St. Louis City	Edwin C. Ernst, Jr., St. Louis
St. Louis City	Max S. Franklin, St. Louis
St. Louis City	William J. Gillespie, St. Louis
St. Louis City	George L. Hawkins, Jr., St. Louis
St. Louis City	Charles A. Jost, St. Louis
St. Louis City	Robert Kelley, St. Louis
St. Louis City	Edward D. Kinsella, St. Louis
St. Louis City	Warren Lonergan, St. Louis
St. Louis City	J. Otto Lottes, St. Louis
St. Louis City	James M. Macnish, St. Louis
St. Louis City	Paul F. Max, St. Louis
St. Louis City	W. F. Melick, St. Louis
St. Louis City	Sam J. Merenda, St. Louis
St. Louis City	R. O. Muether, St. Louis
St. Louis City	Charles H. Nicolai, St. Louis
St. Louis City	Albert M. Repetto, St. Louis
St. Louis City	Daniel L. Sexton, St. Louis
St. Louis City	Charles S. Sherwin, St. Louis
St. Louis City	Jerome I. Simon, St. Louis
St. Louis City	Herbert C. Wiegand, St. Louis

Fourth District

Franklin-Gasconade-Warren	William Richardson, Union
Franklin-Gasconade-Warren	Carvel T. Shaw, Hermann
Franklin-Gasconade-Warren	Harold Hoelscher, Warrenton
Jefferson	J. Logan Mayfield, Crystal City

Lincoln-St. Charles	Edward Damron, Elsberry
Lincoln-St. Charles	Vincent Muenster, St. Charles
St. Louis	Edgar Davis, St. Louis
St. Louis	Maurice A. Diehr, St. Louis
St. Louis	C. Howe Eller, Clayton
St. Louis	Louis F. Howe, St. Louis
St. Louis	Robert A. Mayer, Clayton
St. Louis	James R. Nakada, St. Louis
St. Louis	J. Martyn Schattyn, St. Louis
St. Louis	James C. Sisk, St. Louis
St. Louis	Richard A. Sutter, St. Louis
St. Louis	Roy A. Walther, Jr., St. Louis

Fifth District

Audrain	Glen B. Kallenbach, Mexico
Boone	James C. Cope, Columbia
Boone	C. Thorpe Ray, Columbia
Boone	Hugh E. Stephenson, Columbia
Callaway	Henry Durst, Fulton
Cole	G. D. Shull, Jefferson City
Cooper	G. W. Winn, Boonville
Howard	W. A. Bloom, Fayette
Morgan	Ruth Kauffman, Versailles

Sixth District

Henry	W. D. Bradshaw, Clinton
Johnson	A. L. Folkner, Warrensburg
Lafayette-Ray	William LaHue, Lexington
Lafayette-Ray	Charles T. Riley, Richmond
Pettis	Carl D. Siegel, Sedalia
Saline	R. C. Haynes, Marshall
West Central	
Cass	Alfred Eklund, Pleasant Hill
Cedar	Worley K. Stewart, Eldorado Springs
St. Clair	Donald Geisler, Osceola
Vernon	James J. Pascoe, Nevada

Seventh District

Jackson	Pat A. Barelli, Kansas City
Jackson	John L. Barnard, Jr., Kansas City
Jackson	Dillard M. Eubank, Kansas City
Jackson	John Griffith, Jr., Kansas City
Jackson	George J. Lytton, Kansas City
Jackson	Frederick McCoy, Kansas City
Jackson	James R. McVay, Jr., Kansas City
Jackson	William C. Mixson, Kansas City
Jackson	Othello D. Smith, Kansas City
Jackson	Harry Statland, Kansas City
Jackson	Walter J. Stelmach, Kansas City
Jackson	A. Lloyd Stockwell, Kansas City
Jackson	Charles B. Wheeler, Kansas City

Eighth District

Dallas-Hickory-Polk	O. A. Griffin, Buffalo
Greene	Kenneth E. Knabb, Springfield
Greene	Stanley S. Peterson, Springfield
Greene	Edwin M. Powell, Springfield
Greene	William H. Snead, Springfield
Jasper	R. R. Cohle, Carthage
Jasper	G. A. Schulte, Joplin
Ozarks	
Barry	R. R. Donley, Monett
Lawrence	Kenneth Glover, Mount Vernon
Christian	Stanley Roper, Ozark
Newton	Roy E. Kenney, Neosho
Webster	C. R. Macdonnell, Marshfield

Ninth District

Mid-Missouri	
Dent	B. J. Bass, Salem
Laclede	R. W. Froelich, Lebanon
Phelps	B. E. Russell, Rolla
South Central	
Howell	Harold Miller, Willow Springs
Oregon	C. W. Cooper, Thayer
Texas	James Hasek, Cabool

Tenth District

Butler-Ripley-Wayne	Eugene T. Hansbrough, Poplar Bluff
Cape Girardeau	L. R. Seabaugh, Cape Girardeau
Cape Girardeau	J. N. Jaeger, Jackson
Dunklin	Joe Zimmerman, Kennett
Mineral Area	
Iron	Marvin Menne, Ironton
Madison	Marvin Grossman, Fredericktown
St. Francois	R. A. Huckstep, Farmington
Pemiscot	O. W. Cook, Caruthersville
Perry-Ste. Genevieve	O. A. Carron, Perryville
Perry-Ste. Genevieve	J. F. Lutkewitte, Ste. Genevieve
Semo	R. L. Frazier, Charleston

The invocation was given by Association President Leonard T. Furlow, M.D.

The chairman of the Credentials Committee, Dr. Daniel L. Sexton, reported that satisfactory credentials had been presented by six officers, nine counselors and 93 delegates. He informed the House that this number of delegates constitutes a majority.

Dr. David N. Kerr reported briefly on the work of the Arrangements Committee and expressed the hope that the House would find everything in order.

The minutes of the 106th (1964) Annual Session, which were published in the July 1964 issue of Missouri Medicine were accepted as published.

The Speaker announced appointment of the following reference committees:

ON REPORTS OF OFFICERS

B. J. Bass, Salem, Chairman.
J. L. Mayfield, Crystal City.
Ruth Kauffman, Versailles.
G. L. Hawkins, St. Louis.
George Mandler, Chillicothe.

ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

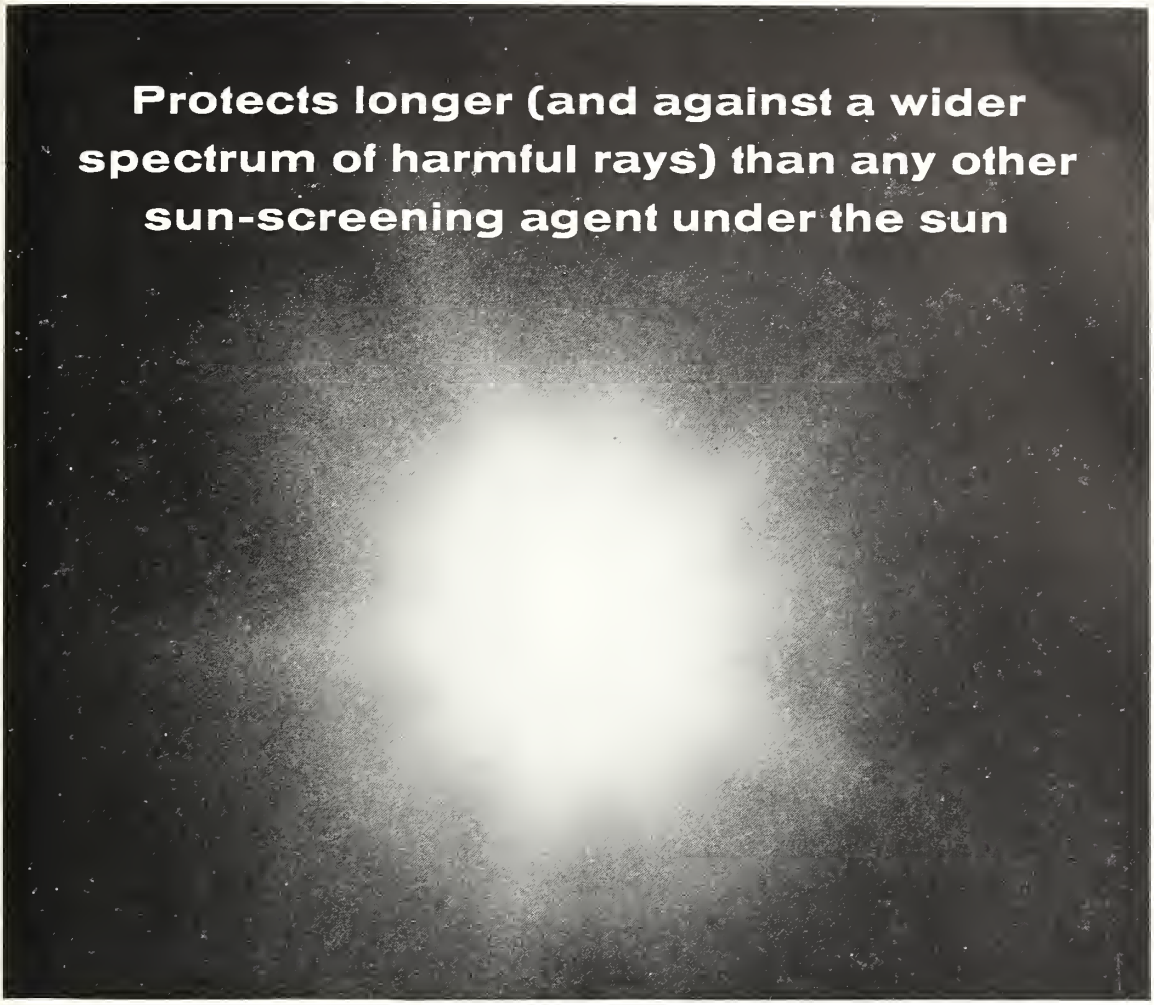
Jerome Simon, St. Louis, Chairman.
James Campbell, Macon.
G. A. Schulte, Joplin.
R. A. Huckstep, Farmington.
Dillard M. Eubank, Raytown.

ON MISCELLANEOUS AFFAIRS

George D. Shull, Jefferson City, Chairman.
R. V. Bradley, St. Louis.
George Lytton, Kansas City.
Rae Froelich, Lebanon.
Joe Zimmerman, Kennett.

ON RESOLUTIONS

Lloyd Stockwell, Kansas City, Chairman.
John Martin, St. Joseph.
R. R. Donley, Monett.
Carvel Shaw, Hermann.
A. M. Repetto, St. Louis.


Protects longer (and against a wider
spectrum of harmful rays) than any other
sun-screening agent under the sun

new UVAL

ULTRA-VIOLET ABSORBING LOTION*

Clinical studies show that many drug-induced photosensitivities are initiated by solar rays longer than 3200 Å. Most commercial lotions absorb *only short, burning rays up to about 3100 Å*. New UVAL provides excellent screening of short, erythema-causing waves *and* sustains high effectiveness throughout the photosensitizing spectrum (up to 6500 Å). Moreover, laboratory studies in humans demonstrate that UVAL protects *hours longer‡* than any other sun-screening agent available. Such protection is unprecedented. UVAL has no known contraindications and is cosmetically acceptable. Literature (including a list of photosensitizing agents) and samples available on request.

‡ As long as UVAL remains on the skin

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*10% 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid

ON MEDICAL EDUCATION AND PUBLIC WELFARE

William H. Snead, Springfield, Chairman.
Thorpe Ray, Columbia.
C. B. Wheeler, Kansas City.
C. Howe Eller, St. Louis.
James Pascoe, Nevada.

ON NECROLOGY

Joseph Jaeger, Cape Girardeau, Chairman.
C. H. Nicolai, St. Louis.
Charles Riley, Richmond.
Donald Kuenzi, Kansas City.
Francis Tarvydas, Edina.

The Speaker called on Doctor Furlow to present the annual President's Message.

(The President's Message is published on Page 531.)

Upon completion of his Message, Doctor Furlow was given a standing ovation by the House. His Message was referred to the Committee on Reports of Officers, except for his proposal to make the Immediate Past-President of the Association a full member of the Council. That portion was referred to the Committee on Amendments to the Constitution and By-Laws.

The Speaker then called on Paul R. Whitener, M.D. to present the annual Message of the Incoming President.

(The Message is published on Page 536.)

The House received Doctor Whitener's Message with a standing ovation, and the Message was referred to the Committee on Reports of Officers.

The Speaker invited Mrs. Ralph Bohnsack to deliver the annual report of the President of the Woman's Auxiliary.

(The report is published on Page 538.)

MSMA officers watch as Speaker supervises parliamentary maneuvering. (l. to r.) Dr. Stanley S. Peterson, MSMA counsel John Noble, Dr. Byron M. Stuart, Dr. Leonard T. Furlow, Dr. Paul R. Whitener.

The House gave Mrs. Bohnsack a standing ovation, and her report was referred to the Committee on Reports of Officers.

The following reports, which were published in the Delegates Handbook, were noted and assigned to appropriate reference committees.

REPORT OF THE SECRETARY

On December 31, 1964, Missouri State Medical Association had 3,928 members. This was an increase of 54 members over the previous year.

MEMBERSHIP CHANGES DURING YEAR

Members, January 1, 1964		3,874
New Members admitted during year	194	
Reinstated	9	
Total added	203	
Members dropped during year	12	
Deceased	81	
Transferred	53	
Resigned	3	
Total lost	149	
Net gain		54
Members, December 31, 1964		3,928

The Committee on Nominations, which is appointed by the President from the House of Delegates, must submit nominations for the following offices:

Three Vice Presidents to fill the expired terms of Ben M. Bull, Ironton; Ralph E. Duncan, Kansas City; Edgar W. Davis, St. Louis.

A Speaker of the House of Delegates and a Vice Speaker of the House of Delegates to fill the expired terms of Stanley S. Peterson, Springfield, Speaker; and Paul F. Max, St. Louis, Vice Speaker.

Two Delegates and corresponding alternates to the American Medical Association to fill the vacancies created by the expiration on December 31, 1965, of the terms of Delegate A. W. Neilson, St. Louis; Alternate, Robert Kelley, St. Louis. Delegate, Richard H. Kiene, Kansas City; Alternate, Hugh E. Stephenson, Jr., Columbia.

The terms (two years) of the Councilors of the even numbered districts expire this year:

Lysle M. Bach, Hannibal, Second District; Paul H. Rother, St. Charles, Fourth District; Rolla B. Wray, Nevada, Sixth District; Doyle C. McCraw, Bolivar, Eighth District; W. D. English, Cardwell, Tenth District. Delegates from these districts shall meet during the meeting, prior to the last day, and elect the Councilor for their district. The election shall be certified to the House of Delegates on a prescribed form which will be furnished.

The entire session will be held in Hotel Chase, St. Louis. The House of Delegates will hold its first session on Sunday, April 4, at 1:30 p.m., in the Chase Club. Reference Committees will meet in committee rooms in the hotel. The second session of the House of Delegates will convene at 4:00 p.m., Monday, April 5, in the Chase Club. The final session of the House, a breakfast meeting, will be held in the Khorassan Room of the hotel at 7:30 a.m. on Wednesday, April 7.

Registration facilities will open on Sunday, April 4, from 12:00 to 3:00 p.m.; on Monday and Tuesday from 8:00 a.m. to 5:00 p.m.; and on Wednesday, from 7:30 a.m. to 9:00 a.m. Registration will be in the Exhibit Hall.

JOHN I. MATTHEWS, Secretary

Referred to the Committee on Reports of Officers.

REPORT OF THE TREASURER

The report of the Treasurer is covered in the Financial Statement which appeared in the March issue of MISSOURI MEDICINE which was in the hands of members and county medical societies approximately 30 days prior to the session. Since the societies have received the report in published form, it is not repeated here.

CHARLES R. DOYLE, Treasurer

Referred to the Committee on Reports of Officers.

REPORT OF THE EXECUTIVE SECRETARY

The personnel of the office, Mr. Ray McIntyre, Miss Helen Penn, Mr. Thomas Fox, Mrs. Bertha Thomas, Mrs. Mary Laskiwitz, Mrs. Shirley Volk and Mrs. Janice Schuckenbrock are deserving of the thanks of the members for devoted service to the Association. I extend my sincere thanks to all of them for their help to me.

A special word is called for on the retirement of Miss Helen Penn. After 34 years of continuous service, Miss Penn retired on December 31, 1964. She will be missed by her many friends in the Association.

Welcome, also to Mr. Allen D. Smith, who joined our staff on October 1, 1964. Mr. Smith is Managing Editor of MISSOURI MEDICINE and will assist with legislation and public relations.

T. R. O'BRIEN, Executive Secretary

Referred to the Committee on Reports of Officers.

REPORT OF THE COMMITTEE ON SCIENTIFIC AND POSTGRADUATE WORK

One of the most important projects of the Committee is to plan and present the scientific program at the MSMA Annual Session. The Committee is fortunate in receiving increasing help from specialty societies and other committees of the Association in selecting and securing speakers. This year the organizations and committees which have assisted with the program or taken an active part in the Annual Session are: the Missouri Heart Association, the Missouri Surgical Society, the Missouri Society of Internal Medicine, Committees on Maternal Welfare, Trauma, Anesthesiology, Medical Economics, Diabetes and Radiology and Ionizing Radiation. This assistance to the Committee is not only greatly appreciated, for the help it gives, but the Committee feels that it makes a much stronger program.

This year the Committee has arranged for the scientific program on Monday morning, April 5, to begin with a breakfast session at 8:30. At Noon on the same day there will be a luncheon scientific session. These are innovations for our program, and we hope they will be well received.

Throughout the year the Committee, with the assistance of the Executive Office staff, helps to plan programs and obtain speakers for component societies. In this respect the Committee continues to work closely with the Education Committee of the Missouri Academy of General Practice. Efforts are continuously made to reduce duplications and conflicts in medical programs.

The Committee also cooperates with other committees of the State Association in providing special programs for county societies. The Maternal Welfare Committee, the Medical Education and Hospitals Committee, the Committee on Control of Venereal Disease, the Committee on the Study of Cardiac Diseases, and the Committee on Civil Defense Disaster Medical Care, all have been most helpful.

During this year the Committee was invited to meet with the Postgraduate Committee of the University of Missouri Medical School and representatives of the Missouri Academy of General Practice and the Missouri Division of Health. The purpose of this session was to find ways and means of improving postgraduate medical education for the busy practitioner over the state of Missouri. The University Medical School Committee has developed a speaker's bureau of faculty members. A brochure containing the speakers' names and their subjects has been mailed to county medical societies. Also, a brochure from the same committee has been developed and mailed to county societies and hospital staffs which offer programs on cancer.

The Committee also wishes to express appreciation to the Missouri Heart Association, the Missouri Division of Health, the Ellis Fischel State Cancer Hospital, the American Cancer Society, the St. Louis University Medical School and Washington University Medical School, for the scientific programs that they have furnished for county medical society meetings and other scientific sessions during the past year.

The Committee wishes to sincerely thank those physicians who have appeared on the many scientific postgraduate programs given over Missouri since our last Annual Session.

JOHN I. MATTHEWS, Chairman
RICHARD YORE
PETER DANIS
J. F. McDONNELL
M. PINSON NEAL
RICHARD CRAIG
JOHN J. MODLIN
PAUL ROTHER
R. A. SLICKMAN
EDWARD D. KINSELLA
ROY PEARSE
JOHN B. SHAPLEIGH

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON DEFENSE

The Committee on Defense has had a case in 1964, involving a member of the Association, "Crossland vs. Dreyer." This case was reviewed by the Committee and it was unanimously agreed that the Association, according to its By-Laws, should assist the member physician to the extent of $300.00.

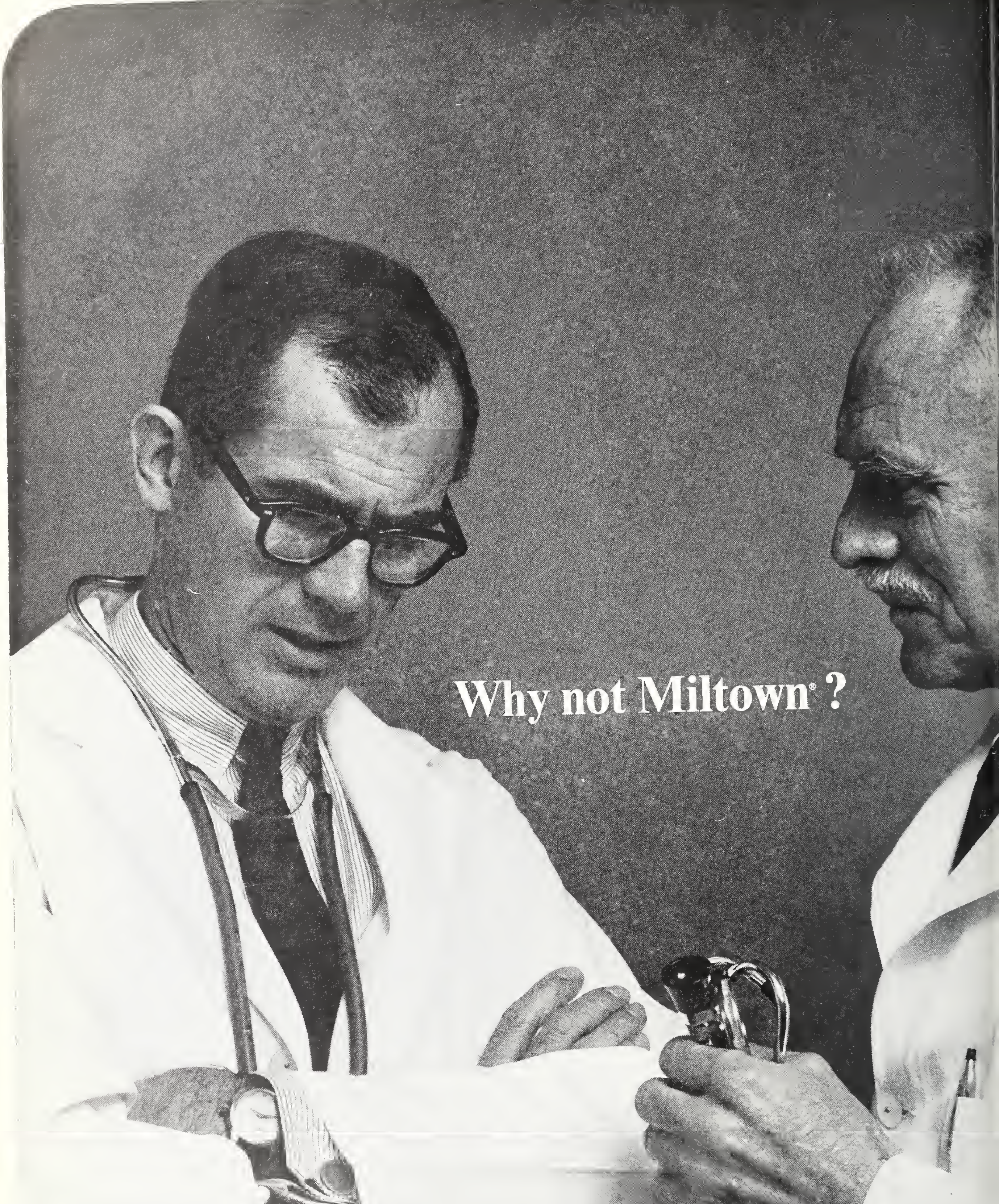
The report was submitted to the Council at its meeting on December 12, 1964, and was unanimously approved by that body.

W. W. GIST, Chairman
WILBUR P. McDONALD
HAROLD W. MILLER
MAX S. FRANKLIN
ROLAND S. KIEFFER

Referred to the Committee on Amendments to the Constitution and By-Laws.

REPORT OF THE PUBLICATION COMMITTEE

The 61st volume of MISSOURI MEDICINE was completed with the publication of the December, 1964 issue. During the year 11 scientific issues were distributed, including one devoted to the University of Missouri


Why not Miltown® ?

There are few "nots" in Miltown therapy

■ **Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.**

■ **The high safety-efficacy ratio of 'Miltown' has been demonstrated by more than a decade of clinical use.**

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

Supplied: In two strengths: 400 mg. scored tablets and 200 mg. coated tablets.

Before prescribing, consult package circular.

Miltown
(meprobamate)

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Medical Center and another to the Ellis Fischel State Cancer Hospital. In July the two annual organizational issues were published. One of these contained the minutes and official reports of the 106th Annual Session of MSMA and MSMF; the other was the annual membership and organization directory of the Association and its Woman's Auxiliary.

During the year 48 scientific articles and 12 special articles were published. In addition there were the usual non-scientific features, news of members and county societies, reports of Association activities and actions of the Council, and monthly messages from the Presidents of the Association and the Auxiliary.

At the end of 1964 the long-time Assistant Editor of MISSOURI MEDICINE, Miss Helen Penn, retired. For the past 34 years Miss Penn has provided a continuing and invaluable source of energy, inspiration and know-how for the publication program. Editorial Boards, past and present, and the Association owe her an immeasurable debt of gratitude.

In January, 1964 the printing order on MISSOURI MEDICINE stood at 4,550 copies. By December, due to increased membership and additional demand for library, exchange and promotional copies, the printing order had been increased to 4,600.

Advertising income for the year totaled $35,573.87. This represents a $2,641.66 decrease from the previous year, due primarily to the continuing decline in national pharmaceutical advertising. The financial report for the state journal for 1964 is as follows:

INCOME		$41,180.27
Member Subscriptions	$ 5,347.50	
Non-member Subscriptions	258.90	
Advertising	35,573.87	
EXPENSES		$59,260.41
Salaries*	$22,017.25	
Printing, paper, etc.	29,725.69	
Postage	875.90	
Discount to advertisers for cash payment	215.41	
Commissions to advertising bureau and agencies	6,426.16	
EXCESS OF EXPENSES OVER INCOME		*$18,080.14*

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* Portions of Executive Office staff salaries are charged to Publication Fund, estimated on amount of time various individuals actually devote to work on MISSOURI MEDICINE.

Joseph V. Finnegan, Chairman
Ben M. Bull
Richard H. Kiene
R. O. Muether
C. G. Stauffacher

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The Committee did not meet during 1964. The following information about the Blue Cross-Blue Shield Plans in Missouri is provided for your information.

ST. LOUIS BLUE SHIELD

Membership, November 30, 1963	696,244
Membership, November 30, 1964	734,714
Amount paid to doctors through November 30, 1964	$ 7,546,549

KANSAS CITY BLUE SHIELD

Membership, November 30, 1963	437,698
Membership, November 30, 1964	438,352
Amount paid to doctors through November 30, 1964	$10,953,436.30

ST. LOUIS BLUE CROSS

Membership, November 30, 1963	990,187
Membership, November 30, 1964	1,010,858
Amount paid to hospitals through November 30, 1964	$36,271,531

KANSAS CITY BLUE CROSS

Membership, November 30, 1963	463,685
Membership, November 30, 1964	452,710
Amount paid to hospitals through November 30, 1964	$16,886,341.57

A program, "The Business Side of Medicine" is to be presented at the 1965 Annual Session. This program is sponsored by our Committee.

John R. Forgrave, Chairman
Rae W. Froelich
Martin P. Hunter
G. W. Winn
Richard L. Sterkel
Kenneth E. Knabb
Donald J. Giesler
Chester L. Clark
Crofford O. Vermillion

Referred to the Committee on Miscellaneous Affairs.

REPORT OF THE COMMITTEE ON MENTAL HEALTH

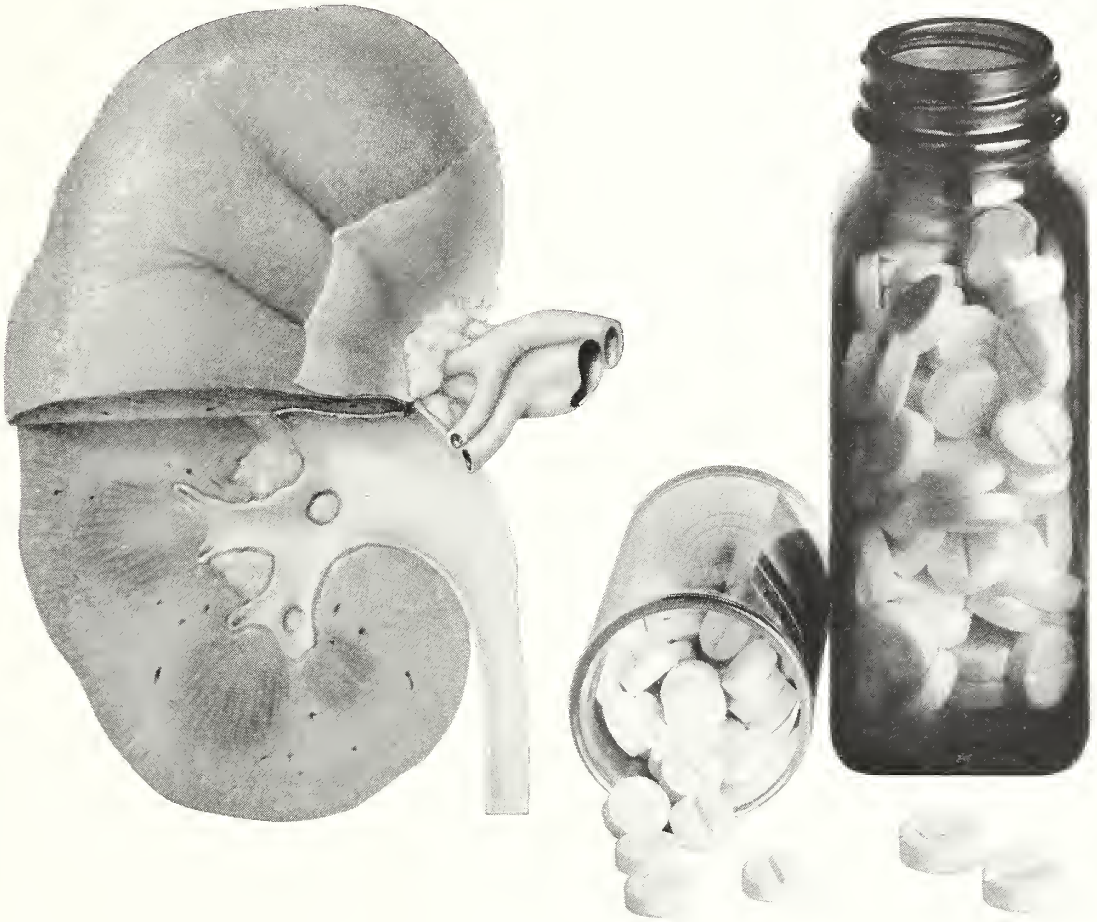
The first meeting of the Committee on Mental Health convened on May 24, 1964, at the Missouri Hotel in Jefferson City, Dr. George W. Forman, Chairman, presiding.

The Committee approved a report by Dr. George Ulett, Director of the Department of Mental Health, on experiences at the State Mental Hospitals in Nevada, and St. Joseph with students from the Kansas City School of Osteopathy. A motion was approved to continue the program.

Concern was expressed regarding the absence of medical supervision of a psychologist practicing in Kennett at the Community Mental Health Clinic. Dr. H. M. Hardwicke, Acting Director of the Division of Health, reported that during a recent visit an agreement was made between the local Medical Society and the psychologist that the clinic would treat only patients referred by licensed physicians.

In the interest of control of standards of care in Missouri's contemplated mental health centers, the Committee approved two resolutions to be presented to the Council. Resolution No. 1: Community Mental Health Centers and Intensive Care Centers, shall require all patients accepted for treatment to be the direct responsibility of the licensed family physician. To be ap-

at Merck Sharp & Dohme...



understanding... precedes development

The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

- Many problems connected with renal structure and function were still undefined or unsolved. The Renal Research Program would begin its basic research in some of these problem areas.
- From knowledge thus acquired might come clues to the development of new therapeutic agents of significant value to the physician.

For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

Along with other research teams at Merck Sharp & Dohme, the Renal Research Program continues to add new understanding of basic problems—understanding which will lead to important new therapeutic agents.

MSD MERCK SHARP & DOHME Division of Merck & Co., Inc., West Point, Pa.

where today's theory is tomorrow's therapy

proved, the clinic must offer psychiatric consultation by a physician specially trained in psychiatry when requested by the attending physician. Resolution No. 2: Community Mental Health Clinics and State Intensive Care Centers to be approved, must meet all the requirements and regulations set up by the Executive Committee on Plans and Planning.

The resolutions were presented to the Council by Dr. James Haddock, on September 26 and approved by the Council and, in turn, were presented to Dr. Robert H. Barnes, Chairman of the Committee in Mental Health Planning.

Only five county medical societies having appointed mental health committees, it was approved that follow-up letters be forwarded to county societies urging such action. To date, such committees have been appointed by twelve county societies. It is hoped that these committees will serve as a nucleus from which organization and management of mental health problems may eventually evolve.

The Committee approved Dr. Ulett's proposal for care of mentally retarded. The program will concentrate on prevention and patient care, using eight to ten small units for diagnosis and treatment. Each unit will contain facilities for day care, 30 to 40 beds for patients, and an outpatient department. Each unit will cost $300,000 to $400,000. Units are to be located 40 to 50 miles apart, or 40 to 90 miles apart, depending on the type of care offered.

The second meeting of the Committee convened at the Missouri Hotel, December 6, 1964.

It was reported that the names of 18 physicians in private practice in four Councilor Districts had been submitted to Dr. Edwin F. Gildea, Executive Director of the Missouri Plans for Planning, a Mental Health Program. Only three physicians had been named to subcommittees, so it was agreed that Dr. Gildea's attention would be called to the list of names.

The Committee examined a proposed bill which would provide certification for Missouri psychologists under a new and separate board. The Committee, subject to approval of the Council, went on record as unopposed to the principle of the certification or licensure of psychologists in Missouri, but were opposed to the proposed bill as written, because it is contrary to the Missouri Medical Practice Act.

Two bills, both sponsored by the Missouri Association for Mental Health, were reviewed by the Committee. One measure proposed a repeal of Section 192.025 and 202.020 concerning the separation of the Division of Mental Diseases from the Division of Health, to set up a separate agency to receive and disburse federal funds. The Committee decided to defer opinion on this bill pending contact with the Division of Mental Diseases. The bill proposing repeal of Section 202.031 concerns increase from five members to seven members on the "State Mental Health Commission." The Committee decided that this bill was not necessary.

The Council later declined to support the Committee opinion of non-opposition to certification or licensure of psychologists in Missouri. The Council also voted against the bills sponsored by the Missouri Association for Mental Health.

The Tenth Annual Conference of Mental Health Representatives, under the auspices of the A.M.A. Council of Mental Health convened in Chicago in February, 1964. Dr. Henry Guhleman, member of the M.S.M.A. Mental Health Committee and Dr. George W. Forman, Chairman, attended.

The Second A.M.A. Congress on Mental Health, held in Chicago in November was attended by the following members of the Committee: Henry Guhleman, M.D., Robert Brookes, M.D., and George W. Forman, M.D., Chairman.

GEORGE W. FORMAN, Chairman
JAMES N. HADDOCK
HENRY V. GUHLEMAN
ROBERT D. BROOKES
D. R. EDWARDS
WILLIAM F. CLARY
PAUL L. BARONE
EDWARD T. AUER
ROBERT S. TERRILL

Referred to the Committee on Miscellaneous Affairs.

REPORT OF THE COMMITTEE ON MATERNAL WELFARE

The Committee on Maternal Welfare met at the Missouri Hotel in Jefferson City on October 25, 1964. Representatives of the Missouri Division of Health and the Attorney General's office of Missouri also attended.

The committee's agenda and discussion pertaining thereto follows:

During recent Maternal Welfare Luncheons, which are held during the Annual Session of Missouri State Medical Association, Drs. A. C. Trueblood and Kenneth S. Nicolay have presented résumés of Committee studies relative to maternal deaths. For the 1965 meeting, Dr. Seymour Monat has been invited to give a similar report covering the maternal mortality study program from its inception to the present. This would supplement the regular annual statistical report of the Committee.

Also for the 1965 Luncheon program, one or two interesting cases from each side of the state will be presented. These will be mimeographed and distributed to those attending the Luncheon. It is hoped that Dr. H. Hudnall Ware of Richmond, Virginia will accept an invitation to appear as guest speaker.

The Chairman pointed out that the Committee still is unable to publish reports of its studies in MISSOURI MEDICINE because physicians, hospitals, nursing homes and other organizations are in danger of legal action if they disclose confidential records needed for such reports. Mr. Clyde Burch, Assistant Attorney General of Missouri, agreed to study laws of other states and submit a legislative proposal on this subject to the Committee. Dr. William B. See proposed that the Council be asked to reopen and reconsider previous actions taken on the confidentiality of maternal death studies and that the AMA be asked for a report on damage suits which have arisen from maternal death studies or hospital tissue committee studies.

A. C. TRUEBLOOD, Chairman
IRWIN T. CRAIG
H. C. WILLUMSEN
WILLIAM B. SEE
JAMES E. KEELER
C. G. STAUFFACHER
J. J. WIMP
MACDONALD BONEBRAKE
E. E. WADLOW
PAUL E. KRATZ
LYMAN D. BROWN

Eugene G. Hamilton
Robert S. Brown
Seymour Monat
Leonard A. Wall

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON INFANT AND CHILD CARE

The Committee on Infant and Child Care met in Jefferson City on November 15, 1964. Representatives of the Missouri Division of Health were also present. Items discussed and a résumé of these discussions follow:

J. R. Robinson, D.D.S., consultant in dental health to the Missouri Division of Health, explained the state program for dental services to crippled children. The program is sponsored by the Elks Clubs of Missouri, operated by the Division of Health and is under the direction of the Governor's Commission on Dental Treatment of Handicapped and Crippled Children. Two mobile dental units which cost about $18,000 apiece are utilized by the dentists and other personnel working under Division supervision. Services are available to youngsters on the state Crippled Children's Service list, indigent rheumatic fever patients who are referred by private physicians and cerebral palsy victims. The Division reports that 331 patients have been seen in the past two years, fillings have been placed in 1,200 permanent teeth and 1,000 deciduous teeth, 123 chrome caps have been placed and numerous other dental procedures have been effected. It's estimated that $66,000 worth of dental services have been performed since the program went into operation. The Missouri program is unique among the states and the Elks Lodge is to be commended for its support. A motion to that effect and urging continuation of the program was approved.

D. M. Love, M.D., Acting Director of Maternal and Child Health Section of the Missouri Division of Health, reported on the P.K.U. (phenylketonuria) detection program. In June of 1964, a letter was sent to nearly 100 outstate hospitals which might expect 100 or more deliveries in the coming year. It explained that P.K.U. is a hereditary defect in metabolism which impairs brain development in an afflicted infant unless a special diet is instituted during the early weeks of life. It admittedly is a relatively rare disease, but hospitals were invited to use the Division's new central detection laboratory in order to spot any cases among newborns. Doctor Love reported that 84% of the hospitals contacted have taken advantage of the faculty. The service will be offered to St. Louis and Kansas City hospitals later. H. M. Hardwicke, Acting Director of the Division of Health, emphasized that the state will abandon this project as soon as local pathologists and laboratories indicate that they are willing to assume responsibility for the program. The Committee voted its wholehearted support for the program and complimented the Division for its leadership in this matter.

Doctor Robinson discussed a resolution of the Missouri Dental Association and a policy statement of the Division of Health opposing the sale of candy, soft drinks and chocolate milk in the public schools of Missouri. As a result of these actions, the State Department of Education will not approve reimbursement for chocolate milk under the school lunch program in 1965. Doctor Robinson urged the Committee and the Missouri State Medical Association to support this effort. After discussion, the Committee voted approval of the Dental Association's resolution, the Division of Health's policy statement, and the Department of Education's action. The Committee also recommended that further study be given to the advisability of eliminating all vending machines and between-meal-eating in elementary schools of the state.

MSMA President-Elect, Dr. Byron M. Stuart, addressing the 107th Annual Session of the House of Delegates.

RESOLUTION OF THE MISSOURI STATE DENTAL ASSOCIATION

Whereas, The consumption of candy, soft drinks, chocolate milk and other confections prepared with concentrated fermentable sugar is associated with an increase in the incidence of dental caries, and

Whereas, The continued and excessive ingestion of such confections reduces and replaces the use of more complete nutritive foods, and

Whereas, The American Dental Association, the American Medical Association and the National Congress of Parents and Teachers have issued statements and resolutions protesting the sale of confections in schools, and

Whereas, The sale of these confections by and in schools are contradictory to the teachings of proper nutrition and wholesome habits, therefore, be it

Resolved, That the Missouri Dental Association recommends and requests that school administrators ban the sale of sweetened beverages and confections on school property and thus eliminate from the schools items detrimental to the health of our children.

POLICY STATEMENT OF THE DIVISION OF HEALTH

The Missouri Division of Health recognizes the mass of evidence concerning the role of fermentable carbohydrates as the primary cause of dental caries and concurs with the Resolution of the Missouri Dental Association and urges parents to impress upon their children that they should not consume such materials as candy, soft drinks, chocolate milk, etc., between meals, in order to lower the high incidence of dental caries and to encourage the consumption of a more nutritious and adequate diet.

The Committee approved the so-called Battered Child proposal which was introduced as House Bill 385 in the 72nd Missouri General Assembly, with the understanding that two changes would be made. There should be a provision whereby the physician is not the only person compelled to report suspected cases of child abuse. Visiting nurses, social workers, school personnel, lawyers, marriage counselors and others often learn of such cases even before medical care is sought. They should be included in any legislation. Also, any person who is required to report child abuse should be immune from any liability, civil or criminal. Such protection should be included in the legislation. The Committee approved support of such a revised bill in the 1965 session of the state legislature.

The Committee approved a motion recommending that Health be made a required subject at the secondary school level in Missouri, that other medical groups be requested to take similar action and that these actions be made known to Dr. Hubert Wheeler, Commissioner of Education, State of Missouri. Dr. Guy N. Magness explained that the Missouri Association for Health, Physical Education and Recreation would have primary responsibility for pursuing this objective, but requested support from the Medical Association.

The Committee also discussed Missouri's compulsory school immunization law and the proposed mental retardation program. No formal action was taken on either subject.

A report of this meeting was presented to the Council of the MSMA on Sunday, December 13, 1964 with the following actions taken by the Council on various items presented in the report.

Elks Dental Mobile Units approved.

P.K.U. Program approved with the suggestion that further follow-up of this testing should be continued in the office of the private doctors throughout the State of Missouri.

Action relating to the sale of candy, soft drinks, chocolate milk, and so forth in Missouri schools was approved.

Battered Child Legislation approved, but such legislation not to be introduced by the MSMA.

Health teaching in Missouri schools. Approved with the amendment that "health education be encouraged in Missouri schools on all levels rather than it be a required subject," as recommended by the Committee.

The Committee's discussions on the Missouri Compulsory Immunization Law and the Mental Retardation Program for Missouri were accepted on an information status by the Council.

The entire report of the Committee was accepted by the Council as amended.

James A. Kinder, Chairman
E. J. Schwartz
James K. Mann
H. E. Petersen
R. J. LaDriere
Guy N. Magness
Ray B. Lewis
James J. Pascoe
Jack N. Wiles
Gerald Hughes
C. Read Boles
Ben H. Koon
Ernest L. Glasscock

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

Two proposed By-Law changes are submitted as recommended by the Council.

The first of these relates to a special assessment for the Missouri State Medical Foundation for a period of three years beginning in 1966.

Resolved, That the By-Laws of Missouri State Medical Association, Chapter VIII, Section 1 (b) be amended by striking out all of said Section 1 (b) and inserting *in lieu* thereof the following:

(b) An assessment of $7.50 per year for a three year period beginning in 1966 shall be applicable to each active member and $3.75 to each junior member of the Association. The assessment shall be payable with the dues of the Association, and shall be remitted by the Association to the Missouri State Medical Foundation.

The second proposed change relates to a method of establishing a Grievance Committee at the Councilor District level.

Resolved, That the By-Laws of Missouri State Medical Association, Chapter VI, Section 4 be amended by striking out all of said Section 4 and inserting *in lieu* thereof the following:

Section 4. The District Councilor, together with two (2) members of component societies within the Council District, selected by the Councilor, shall serve as a Board to hear and, by a majority vote, adjudicate any questions involving the right and standing of members, either in relation to other members or to component societies or to the Association, and all matters of discipline affecting the conduct of members of component societies, or other matters.

The Council shall be the Appellate Board of Censors of the Association. It shall hear and adjudicate all matters on appeal from the decision of the Councilor Board; it shall hear and adjudicate matters of an ethical nature brought before the House of Delegates or the General Meeting, which shall be referred to the Council without discussion. On original decision or appellate determination, its decision shall be final, unless appealed to the then convened meeting or the next meeting of the House of Delegates.

The Committee and the Council recommend these changes in the By-Laws.

W. A. Bloom, Chairman
Donald M. Dowell
R. O. Muether
H. M. Parker
James R. Meador

Referred to the Committee on Amendments to the Constitution and By-Laws.

REPORT OF THE COMMITTEE ON EYE HEALTH

Nothing has come to the attention of the Committee during the past year which would warrant an official meeting. During the year, however, members of the Committee were canvassed for opinions in regard to the current legislative proposal for amendments to the Optometry Bill. There appears to be nothing in the proposal which would warrant action by the Association.

The Committee was also canvassed in regard to the proposed changes in the visual examination requirements for driver's license renewals. A recommendation on this matter will be submitted to the House of Delegates.

The Chairman and two Members of the Committee attended the workshop of the National Medical Foundation for Eye Care in Chicago, and the Chairman attended the meeting of the House of Delegates.

John McLeod, Chairman
Flavius G. Pernoud
Paul M. Beck
John A. Buesseler
Paul G. Wolff
Dick H. Underwood
S. Albert Hanser
D. E. Eggleston

John D. Maddox
George Mandler
James H. Bryan
Bill G. Prater

Referred to the Committee on Resolutions.

REPORT OF THE COMMITTEE ON LABORATORY MEDICINE

The Committee on Laboratory Medicine met December 12, 1964 in St. Louis.

Consideration was given to a proposed state coroner bill, to be introduced during the 73rd Missouri General Assembly. Following a discussion, the Committee recommended that the State Medical Association should take no official action to support or oppose this bill. The Committee agreed, however, that MSMA should support enactment in the 73rd Missouri Assembly of a bill to create a statewide medical examiners system. The Committee approved a bill with no revisions which was drafted by the Association in 1963. The Chairman, Dr. Charles Wheeler, speaking as President of the Missouri State Association of Pathologists, will ask Drs. Henry Allen and Angelo Lapi to testify at hearings in support of this Bill. Dr. Wheeler stated that he is committed as Jackson County Coroner-Elect to introduce a separate medical examiner bill for Jackson County.

After a review of California Law, Section 1623 of Health and Safety Code regulating blood banks, the Committee agreed that a similar bill should be introduced in the 73rd Missouri Assembly. Dr. Charles Wheeler and Dr. Henry Allen offered to testify at hearings.

The Committee discussed and agreed, if called upon, to testify at hearings for bills which might be introduced concerning intoxicated automobile operators.

The Committee reported efforts by Missouri State Association of Pathologists to clarify with Missouri Division of Health a point of separation between private practice of pathology and public health pathology service. A letter from Missouri State Association of Pathologists concerning this problem will be sent to the full MSMA membership stating willingness to render indigent care on the same basis as other Doctors of Medicine.

Charles B. Wheeler, Chairman
James G. Bridgens
Henry Sweets
David F. Gorelick
T. J. Cooper

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health met December 9, 1964 at the Chase Hotel in St. Louis.

Attention was called to the Missouri Workmen's Compensation Law which, at present, permits covered employees to file claim in Compensation Court and also in Civil Court, accepting whichever judgment is more favorable to the employee. The industry physician must testify in both courts. Frequently, when Compensation Law rules against the employee, he immediately files suit in Civil Court for malpractice against the industry physician. The committee agreed to seek legal advice from MSMA legal counsel. Suggestion was made to consult also representatives of industry and general liability insurance carriers.

The committee discussed a report of 23 suggested standards for Workmen's Compensation Laws, published by the International Association of Industrial Accident Boards and Commissions. Items discussed included: (a) **Initial Choice of Physician.** The Committee agreed that greater restriction should be applied. Experience indicates that when other than doctors of medicine are chosen, or physicians not familiar with industrial type of work, cost of care increases greatly. The Committee reported examples of this problem under present Missouri Law. (b) **Supervision of Medical Care by Compensation Agency.** The problem of medical supervision performed by non-medical officials was discussed. Committee agreed that regulations for implementation should be clearly defined.

For further consideration and study of the suggested medical standards listed, the committee will consider meeting in the near future. It was suggested that invitations could include representatives of management, labor, insurance carriers, and the legal profession.

Douglas A. Ries, Chairman
Paul J. Centner
William L. Macon
S. W. Scorse
R. A. Sutter
James Clawson
Van W. Taylor
C. Rush McAdam

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON DIABETES

The Committee on Diabetes sent a brief questionnaire to the County Medical Societies to determine their interest in diabetic detection studies.

Thirty answered questionnaires were returned. Examination of these revealed that 18 societies reported planned diabetic detection programs in the past two years. Fifteen of these reported detection by testing the urine for glycosuria, but only four programs mentioned that blood sugar determinations were performed. The same number (four) reported that some type of questionnaire was used.

Twelve societies reported that a diabetic detection program had not been performed in the past two years.

The second question was asked to ascertain if detection programs were planned within the next two years. Nine answered in the affirmative, eleven in the negative, and ten were uncertain. It was of interest that only three of the affirmative ones had planned to use blood sugar determinations and a urine testing method.

A third question was used to determine if the relatives (lay people) of diabetic people had shown any interest in detection to the physician of the various societies. Fifteen questionnaires were returned in the affirmative, four negative and eleven uncertain. This response demonstrated that the lay people are aware of the importance of diabetes detection. The Missouri State Diabetes Association has been interested in forming diabetic lay organizations in the State for a number of years.

The last question was inserted to determine if the physicians and lay people of the various counties would be interested in diabetic educational programs. Eleven societies answered in the affirmative, eight in the negative, and fifteen were uncertain.

It is apparent from the results of this type of study that we are not exerting enough effort in stressing the early detection of diabetes and in educational programs in the State. In the past many detection studies have shown that urine testing methods alone will miss many asymptomatic diabetic people. It is also necessary to use questionnaires or personal interviews and postprandial blood sugar determinations or some type of a glucose tolerance test.

The population of Missouri is approximately 4.4 million, and it is estimated that there are 35,000 unknown diabetics and over 40,000 known or diagnosed diabetic people. The U. S. Public Health Service estimates that only 1.6 people per 1,000 of civilian population was screened for diabetes in 1962 in the State of Missouri. Therefore, we should strive to work harder to discover the unknown diabetic and to sponsor educational programs in our State.

The Diabetes Associations of Kansas City and St. Louis have been performing annual diabetic detection campaigns for a number of years. These two Associations direct Diabetic Camps for Children each year and sponsor educational programs for the lay people throughout the year.

The Missouri State Diabetes Association conducts educational programs for the physician twice a year and one of these is in conjunction with the Annual Meeting of the Missouri State Medical Association.

Harold K. Roberts, Chairman
H. E. Oppenheimer
Thomas W. Burns
Lucien W. Ide
William H. Olmstead
Harold H. Lurie
Edward S. Jones
Charles F. Wilson

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON CONTROL OF VENEREAL DISEASE

The Committee on Control of Venereal Disease met two times during 1964. The major concern of the Committee this year has been to add its support to the State Division of Health in stimulating awareness and interest in the problem of venereal disease to the doctors of the State of Missouri.

Seminars have been held by members of the Committee. Dr. Neilson of St. Louis has held seminars at Lutheran, Deaconess and St. Luke's Hospitals in St. Louis, where he has presented clinical material from the Health Clinic, demonstrated Dark Field techniques, and arranged films and discussions on treatment and diagnosis. He also spoke before two county medical societies. Dr. Bristow of St. Joseph, in cooperation with the Health Director, has given seminars in high schools and grade schools, and has arranged to have venereal disease education phases in family planning classes for senior girls.

Another agency which has been utilized for venereal disease teaching to young people is the Y.M.C.A. Negotiations were conducted to make V.D. clinical material available to the University Medical School. The material will be supplied by the Missouri Division of Health. Arrangements have been made for admissions of clinical cases, in the various stages of lues, for demonstration to students of the University and doctors throughout the state. The State Division of Health, in cooperation with the Greene County Medical Society, arranged to have 105 doctors briefed on the present V.D. situation by representatives from the Health Department. The project was well received by the doctors of Greene County.

Recommendations of the Committee to the Council of the Missouri State Medical Association are as follows:

(1) That the program at the annual meeting include a paper or a discussion on venereal disease, and members of the Committee are ready to assist in the arrangement or presentation of such a program.

(2) That the Missouri Division of Health apply for an exhibit on a commercial basis to present an appropriate exhibit for venereal disease.

(3) Because of the large number of biological false positives reported to the Division of Health, this Committee recommends that a research project be established by the Division of Health to determine the extent of false positives; and if significant, set up a double study to rule out laboratory error rather than biological error.

(4) That Dr. Belden and Dr. Neilson be commended for the excellent article in MISSOURI MEDICINE, which was extremely well written and received.

(5) We recommend to the Missouri Division of Health that they consider working out a form to be included with their positive reports to give the physicians a guide for the steps to be taken to confirm the positive VDRL report.

Edwin M. Powell, Chairman
E. A. Belden
A. W. Neilson
Robert B. Bristow
T. E. McMillan
M. Richard Carlin

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON CIVIL DEFENSE DISASTER MEDICAL CARE

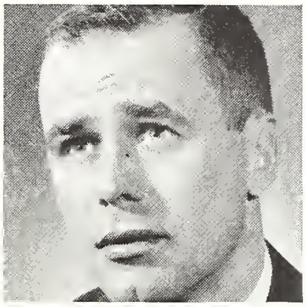
The Committee on Civil Defense Disaster Medical Care did not meet during the year of 1964.

The chairman attended several meetings across the state explaining the program of medical self-help which is a course of training to prepare the public for emergency action in the event of disaster.

With the assistance of numerous Missouri physicians, the Civil Defense Program in Missouri is rated in the top ten of the states conducting medical self-help training programs.

Carl D. Siegel, Chairman
John T. Crowe
H. D. Steinbeck
Carroll P. Hungate

J. C. Camilleri—St. Louis, North



G. E. Hartsock—St. Louis, South

R. C. Foley—St. Joseph-Kansas City

C. M. Meinhardt—Springfield-Kansas City

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William F. Bell
John H. Walterscheid
Curtis H. Lohr
R. Ned White
George E. Thoma
George L. Watkins
O. P. Hampton
J. S. Sanders
John L. Mothershead
Robert R. Donley

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON RADIOLOGY AND IONIZING RADIATION

There is in effect at the present time a Radiation Law in the State of Missouri. These regulations for radiation protection were written in order to protect and safeguard the public, as well as the personnel who use radioactive materials, no matter what the source. The Division of Health is empowered to enforce this program of radiation protection which all physicians will be required to adhere to. Therefore, it is suggested that all physicians in the State make themselves familiar with the Radiation Law.

Also during this year your Committee has cooperated by providing Radiologists to participate in the scientific programs.

Mark D. Eagleton, Chairman
Gwilym S. Lodwick
J. Stewart Whitmore
James S. Summers
Marvin L. Napper
Wayne K. Tice
William E. Allen
Wayne A. Simril

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON TUBERCULOSIS

The Committee on Tuberculosis met in Jefferson City, on May 3, 1964. This meeting was held jointly with the Missouri Tuberculosis Association. The Executive Committee of the Missouri Tuberculosis Association asked for consideration by the MSMA Committee on Tuberculosis, of a problem regarding the expense of re-examination X-rays needed by discharged patients from the State Tuberculosis Sanatorium at Mount Vernon. Policy formerly adhered to has been that voluntary Tuberculosis Associations pay for diagnostic, but not for follow-up X-rays. Tax funds have been used for these X-rays, and these funds were allocated by the County Court.

Following discussion, motion was approved to form a Subcommittee for the study of this problem. This Committee has been formed and will meet in February of 1965.

Study of "Out-State indigent medical tuberculosis care" was referred to the Tuberculosis Committee by the Reference Committee on Medical Education and Public Welfare of the Missouri State Medical Association at the Annual Session, March, 1964. A Subcommittee was appointed. This Committee met to study these problems, in St. Louis on November 6, 1964. It was the consensus of this Committee that further study on this problem is necessary before final recommendations can be submitted. It was agreed, however, that progress report could be made to the full Committee on Tuberculosis prior to the annual session of the Missouri State Medical Association in April of 1965.

Attention was called to Tuberculosis Committee members of regulations regarding tuberculosis patient commitment and isolation. All physicians are urged to apply these laws in the best interests of the patient and the general public.

Reference was made to the report "The Future of Tuberculosis Control." This is a task force report which was made to Dr. Luther L. Terry, Surgeon-General, by the seven men representing public health, medical education and practice, and the public, to consider the present unsatisfactory situation in tuberculosis and to recommend steps to remedy it. The final report was published by the Department of Health, Education and Welfare (No. 1119 Dec., 1963). This report was accepted by the Committee and it was suggested that it be implemented by the Missouri Division of Health.

Florence E. MacInnis, Chairman
Paul Murphy
H. M. Roberts
Joseph L. Lucido
Walter C. Gray
David N. Kerr
John W. Polk
Sheldon B. Beecher
Judson I. Chalkley

Referred to the Committee on Miscellaneous Affairs.

REPORT OF THE COMMITTEE ON THE STUDY OF CARDIAC DISEASE

The Committee on the Study of Cardiac Disease met in Jefferson City on Sunday, June 28, with representatives of the Missouri Division of Health and the Missouri Heart Association, to consider the development of a Rheumatic Fever Secondary Prevention Program for the state of Missouri, as recommended by the Missouri State Wide Advisory Committee on Rheumatic Fever.

The discussions and actions of the committee relating to this important matter are as follows:

The Committee met in Jefferson City on Sunday, June 28, 1964 to consider the development of a rheumatic fever secondary prevention program for Missouri. Dr. W. C. Allen, Missouri Division of Health, reported that at the request of the State Wide Rheumatic Fever Advisory Committee the Division had started a study of this health problem in the fall of 1962. Questionnaires were sent to 194 hospitals, 4,662 M.D.'s and 1,164 D.O.'s requesting figures on rheumatic fever and/or rheumatic heart disease cases. Returns indicated at least 3,851 confirmed cases and 87 suspected cases during 1961.

Dr. Earl Loyd explained the Minnesota Rheumatic Fever Secondary Prevention Program which has been recommended as a model for organizing a Missouri program. The Committee was also informed of comparable programs which are already in operation in St. Louis and Kansas City.

The Committee then gave unanimous approval to the following motion: The Committee on the Study of Cardiac Disease recommends that: (1) A low cost rheumatic fever secondary prevention program for Missouri, patterned after the Minnesota Plan and administered by the Missouri Division of Health, be accepted in principle; (2) That the State Wide Advisory Committee on Rheumatic Fever in Missouri give thought to extension of the rheumatic fever secondary prevention program to the totally indigent (people on welfare); (3) That the State Wide Advisory Committee on Rheumatic Fever in Missouri make special contact with the pharmaceutical association of Missouri to solicit their approval and cooperation in the establishment of a rheumatic fever secondary prevention program in this state.

This action was considered and approved by the Council of MSMA on September 13, 1964.

James G. Janney, Chairman
Earl L. Loyd
William I. Park
William J. Shaw, Sr.
Jack M. Martt
Robert Mosser
William J. Gillespie
Caryl A. Potter
F. J. Biggs
Joseph C. Edwards
Thomas H. Burford
J. Tenbrook King

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE COMMITTEE ON RURAL MEDICAL SERVICE

A meeting of the Committee was held in Columbia on Saturday night, January 16, 1965. Numerous items concerning rural medicine in Missouri were discussed with actions taken as follows:

A substantial number of physicians have located in rural Missouri during 1964, and included in this number are 20 graduates of the University of Missouri Medical School. Many of these doctors secured location information from the State Medical Association office before making their selection. Members of the Committee feel that the preceptorship program at the Missouri University Medical School is proving most helpful, and will be more so in the future, in influencing Missouri University graduates to practice in Missouri and particularly rural Missouri. The Committee commends the Medical School on its new program of requiring *all* graduates after 1965 to have participated in the preceptorship program which is operated through the cooperation of selected preceptors in small towns in rural Missouri.

Suggestions were offered by members of the Committee as to possible effective and pertinent points of information to use in discussing locations with new physicians. In addition, members of the Committee expressed a willingness to discuss possible locations in their respective areas with those seeking a place to establish a medical practice.

The Committee congratulates the Missouri State Medical Foundation on its program of loan assistance to worthy Missouri resident medical students. It is strongly recommended that members of the MSMA continue substantial financial support to the Foundation. The Committee notes with pleasure the current financial report of MSMF and in particular takes pride in the fact that all eligible loan applications of Missouri residents submitted have been met by this privately financed program. Since the means and resources for medical education are currently a great national interest, the Committee recommends that the MSMA fully appraise the Missouri Representatives and Senators in the U. S. Congress of the outstanding success of this program.

The Committee discussed in detail various programs of the Missouri Division of Health that relate to rural health. The Committee feels that the orientation and philosophy of these programs under the able leadership of Dr. H. M. Hardwicke and staff have very substantially complimented the efforts of the rural physician to improve the level and amount of medical care available to the people of outstate Missouri. The Committee noted with pleasure the good rapport being established between the physicians of the State and the Division and believes that this is a basic and fundamental of any effective public health program in any state.

The Division of Mental Diseases under the leadership of Dr. George Ulett has been charged by the Governor of Missouri with the responsibility for developing a mental health program. MSMA has two representatives on the subcommittee for planning mental health centers. They are Drs. Rae Froelich and B. J. Bass. General guidelines for personnel and staffing of regional centers and admission and discharge policies have been established. General admission to the centers will be by referral by a local family physician and discharge from the center back to the local physician with adequate reporting of diagnosis and treatments. This envisions a cooperative working relationship, on the local level, by the family physician, social services and public health personnel of the community, and provides for an after continuity of care to the patient when he returns to the community. Emergency admission, of course, will be made as in any general hospital. The Committee encourages all members of the MSMA to be actively interested and aware of these programs and to actively participate and assist in their direction at the community level.

The Committee voted unanimously to again jointly sponsor a luncheon meeting for the Junior medical students at Missouri University during the May, 1965 Clinical Conference at Missouri University Medical School. Discussions will be presented by members of the committee to these students on solo, partnership and group practice in rural Missouri. In addition, talks on county, state and national medical society organizations and functions will be presented by the Presidents of the MSMA and the MAGP. The May 1964 luncheon meeting for the Missouri University Medical School Juniors was considered highly successful by the committee.

B. J. Bass, Chairman
J. Marshall Jung
James H. Sweiger
K. S. Latham
H. F. Hoelscher
James E. Campbell
Charley A. Worley
A. J. Graves

Referred to the Committee on Medical Education and Public Welfare.

REPORT OF THE PUBLIC SERVICE COMMITTEE

The major activity of the Public Service Committee during the year was concerned with the AMA's national education program on the Health Care for the Aged issue. The Committee met on September 25, in St. Louis, to discuss and consider materials from the Communications Divisions of the AMA which had been prepared for nationwide magazine and newspaper advertising. After close study of the proposed advertisements, it was the conclusion of the Committee that these advertisements should not be used in Missouri newspapers as they would not present a true picture of the Kerr-Mills program in the state. It was unanimously voted to recommend to the Council that these advertisements not be used in Missouri and that efforts be made to have the AMA Board of Trustees reconsider the national program. A telegram expressing these views was immediately sent to the AMA.

Dean of the M.U. School of Medicine, Dr. Vernon E. Wilson, addresses one of the scientific sessions. He also was the principal speaker at the Annual Presidents' Banquet.

On October 1, the Committee met again to discuss the matter with the following representatives from the AMA: Drs. Donovan F. Ward, President; Percy E. Hopkins, Chairman of the Board of Trustees; F. L. J. Blasingame, Executive Vice-President; and Ernest B. Howard, Assistant Executive Vice-President, and Mr. Jim Reed, Director of Communications. As a result of the discussion at this meeting, the Committee decided to have MSMA's public relations counsel prepare special advertisements appropriate to the circumstances in our state.

Such an advertisement was prepared and approved by the Committee and the Council, and cleared with the AMA in Chicago. The advertisement appeared in newspapers throughout the state in mid-October. Further, a detailed background and fact sheet on the Missouri Kerr-Mills program was prepared and sent to all constituent societies and individual physicians to guide them in answering inquiries about this program.

Throughout the year, the members of the Public Service Committee continued to oversee the Association's public service programs and gave assistance wherever possible to the activities of MMPAC, Operation Hometown and similar public service activities, as well as remaining alert to the developments concerning the King-Anderson proposal and progress of the Kerr-Mills program in Missouri.

The Public Service Committee, in keeping with its custom of the past several years, hereby submits a résumé of expenditures incurred by the Committee in carrying forward its objectives during the year. Although not strictly chargeable entirely to the formal activities of this Committee, since additional work is done for other committees and in other phases of the over-all program of the Association, all fees paid to the public relations counsel of the Association are included in this accounting. Total expenditures for 1964 were $19,194.68.

Hector W. Benoit, Jr., Chairman
Leonard T. Furlow
Paul R. Whitener
Armand E. Brodeur
Fred L. Wommack

Referred to the Committee on Miscellaneous Affairs.

The following Committees had no specific assignments or projects during the 1964-65 years, so had no formal reports to make to the House. Many members of these committees were working during the year, however, keeping informed in their committees' areas of interest, representing the Association at meetings and conferences, and assisting in arranging programs and scheduling speakers for both medical and lay meetings.

AGING
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PHYSICAL MEDICINE AND REHABILITATION
TRAUMA

Dr. Carl D. Siegel, chairman of the Commitee on Civil Defense Disaster Medical Care, filed a supplementary report by his Committee. It proposed the name of the Committee be changed to, "A Committee on Disaster Medical Care and National Defense." A proposed By-Laws amendment to this effect was submitted and referred to the Committee on Amendments to the Constitution and By-Laws.

The Speaker noted that reports of Council meetings during the past year and various Council recommendations were published in the Delegates Handbook.

THE COUNCIL

Meeting of March 11, 1964

Leonard T. Furlow, M.D., President of MSMA, called the meeting to order. Those present were: Drs. Furlow; Joseph L. Fisher, St. Joseph; David N. Kerr, St. Louis; Paul H. Rother, St. Charles; Byron M. Stuart, Boonville; Rolla B. Wray, Nevada; Hector W. Benoit, Jr., Kansas City; Doyle C. McCraw, Bolivar; E. A. Stricker, St. James; W. D. English, Cardwell; Stanley S. Peterson, Springfield; A. W. Neilson, St. Louis; H. E. Petersen, St. Joseph; Paul R. Whitener, St. Louis; Messrs. Jordan Singleton, Vincent Sanders, Hollister Smith, Ray McIntyre, St. Louis; Allen D. Smith, Kansas City; Gary Schnedler, Springfield; Misses Peggy Heilig and Helen Penn, St. Louis.

Three new Councilors were introduced: David N. Kerr, St. Louis, 3rd District; Paul H. Rother, St. Charles, 4th District, unexpired term; Rolla B. Wray, Nevada, 6th District, unexpired term.

On motion, duly seconded, Doctor Stuart was reelect-

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>
> **Residual pain,** when relaxation of severe spasticity leaves a degree of myalgia that continues to cause discomfort.
>
> **Severe pain,** when the degree of pain is such as to cause persistence of symptoms in spite of relaxant therapy.
>
> **Emotionally aggravated pain,** when anxiety or agitation creates tensions that undermine the efficacy of relaxant medication.

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INDICATIONS: Strains and sprains, painful disorders of the back, "whiplash" injury, myositis, pain and spasm associated with arthritis, torticollis, and headache associated with muscular tension.

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References: 1. Carpenter, E. B., South. M.J. 51:627, 1958. 2. Crookshank, J. W.: J. Louisiana State Med. Soc. 114:272, 1962. 3. Feinberg, I., et al.: Am. J. Orthoped. 4:280, 1962. 4. Fitzgerald, W. J.: Miss. Valley M.J. 82:146, 1960. 5. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 6. Meyers, G. B., and Urbach, J. R.: Penna. M.J. 64:876, 1961. 7. Truitt, E. B., Jr., Morgan, A. M., and Nachman, H. M.: South. M.J. 54:318, 1961. 8. Weiss, M., and Weiss, S.: J. Am. Osteopath. Assn. 62:142, 1962.

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ed Chairman of the Council and presided through the remainder of the session.

On motions, duly seconded, the following officers were elected by acclamation: John I. Matthews, Jefferson City, Secretary; Charles R. Doyle, St. Louis, Treasurer; Hector W. Benoit, Jr., Kansas City, Vice Chairman of the Council.

Dr. Neilson said that there was indication that the AMA might consider St. Louis for an Interim Session in the not too distant future. It was suggested that the Missouri delegation be more active at the coming AMA session, possibly having some favor to give to all delegates. On the suggestion of Dr. Kerr, Dr. Stuart appointed a committee of Drs. Furlow, Wray and Benoit to work with the delegates and Tom O'Brien on this matter.

The Mental Health Planning Committee was discussed and on motion of Dr. Furlow, duly seconded, the names of Dr. B. J. Bass, Salem, and Dr. Rae W. Froelich, Lebanon, were selected to be submitted for appointment to this committee.

Mr. McIntyre said that Dr. Matthews had suggested that the Annual Session might begin in the middle of the week, as with a House of Delegates session on Thursday evening, Friday and Saturday devoted to scientific work, banquet on Saturday evening and adjournment after the House of Delegates breakfast on Sunday morning. The Council was asked to study this suggestion.

The plans for the meeting of the Council on May 15 and 16, followed by a meeting of component society officers with a dinner on Saturday night and workshop on Sunday morning was discussed. It was voted on motion, duly seconded, that this type of meeting be held, beginning with a council luncheon on Friday, May 15. It was agreed that the session should be held in St. Louis.

Meeting of May 15 and 16, 1964

Byron M. Stuart, M.D., Boonville, Chairman, called the meeting to order. Those present were: Drs. Stuart; Joseph L. Fisher, St. Joseph; David N. Kerr, St. Louis; Rolla B. Wray, Nevada; Hector W. Benoit, Kansas City; Doyle C. McCraw, Bolivar; E. A. Stricker, St. James; W. D. English, Cardwell; Leonard T. Furlow, St. Louis; Paul R. Whitener, St. Louis; John I. Matthews, Jefferson City; Charles R. Doyle, St. Louis; Vernon E. Wilson, Columbia; H. M. Hardwicke, Jefferson City; Walter S. Wiggins, Chicago; Stanley S. Peterson, Springfield; Gerald L. Miller, Kansas City; Charles B. Wheeler, Kansas City; A. W. Neilson, St. Louis; Angelo Lappi, Kansas City; Messrs. John W. Noble, Kennett; Gary Schnedler, Springfield; Hollister Smith, St. Louis; Edgar Mothershead, St. Louis; Frank Woolley, Chicago; Jordan Singleton, St. Louis; Allen Smith, Kansas City; Thomas P. Fox, Ray McIntyre, T. R. O'Brien, St. Louis; Misses Peggy Heilig and Helen Penn, St. Louis.

Dr. Wiggins, Secretary of the AMA Council on Medical Education, discussed the work of the Council and resolutions that have been introduced in the AMA House of Delegates. He said in part: In June 1962, as a substitute for Resolution No. 6 (introduced by the Missouri Delegation) the Reference Committee on Medical Education and Hospitals proposed the following: Resolved: (1) That at least six members of the Council shall be engaged in the private practice of medicine in hospitals that do not have a medical school affiliation; (2) That no more than four members may be salaried personnel of a medical school or university; (3) That in the selection of all individuals as nominees for election to Council membership, deliberate care shall be exercised to assure that those selected understand and are sympathetic to the medical care needs of the public.

In presenting the substitute resolution under study, the Reference Committee stated . . . "it believes it important that members of the Council understand the needs of the private practice of medicine and the community hospitals in which it functions. In particular the Council should appreciate the proper role of the non-university hospital for intern and resident training." The Council believes it is evident from this statement of the Reference Committee and from the discussion in the hearing of the proponents of the original resolution that the proposal originated from dissatisfaction with the number of house officers, especially interns, who accept positions in non-university affiliated community hospitals. The Council does not place interns and influences their placement only by limiting the possibilities for the student's selection to hospitals with programs approved by the Council. It endorses all approved programs as being of good educational value and makes no attempt to differentiate among them.

In 1951, five out of 10 Council members were primarily full-time medical educators and the other five were primarily full-time in the private practice of medicine. Only one member was without a medical school faculty appointment and the same individual was the only member not related to a university affiliated hospital. Three members conducted private practice in both non-affiliated and affiliated hospitals.

At present eight members are primarily in full-time private practice while two are full-time educators, one of these being a university chancellor and not directly active in a medical school. Three members have neither a faculty appointment and are not related to an affiliated hospital. Four have clinical faculty appointments but conduct private practice in non-affiliated hospitals almost exclusively.

In 1951, 51 per cent of students selected non-affiliated hospitals for their internship, but in 1961, only 46 per cent elected an internship in this type of hospital. Thus, the student selection factor (which is not controllable by the Council) did change in favor of the affiliated hospital.

The AMA Reference Committee substitute resolution in 1962 differs only in form from many other resolutions introduced year after year which no matter how worded express the understandable desire of all hospital attending staffs to enjoy the service and intellectual benefits to be derived from an adequate complement of interns. The remarkable consistency with which the House of Delegates has supported the Council to strengthen the basic educational purpose of the internship deserves emphasis. It provides ample evidence that the vast majority of delegates recognizes and supports house officer training as educational programs for the primary benefit of the young physician-trainee. By its own actions the House has repeatedly reminded all concerned that dilution of the quality of advanced clinical education can be only harmful to the welfare of medicine and the public it serves.

The Council in composite must represent the greatest possible measure of direct knowledge and experience in the undergraduate, graduate and continuing phases of medical education as well as education in fields importantly related to medicine. These requirements are so broad that they cannot all be found to the necessary degree in single individuals. Thus, it is most important that individuals be selected for Council membership in relationship to these broad needs and the particular competence of the total membership of the Council at the moment. There are other organizations actively concerned with the educational standards of the several phases of medical and related training. However, none of them except this Council is responsible for standards over the total span of medical education and none but the Council has the intimate welfare of the whole of medicine's public obligation for educational standards as a direct responsibility. The Council must represent far greater, not lesser, competence than any of these other organizations.

Questions were asked of Dr. Wiggins and the subject was discussed by several. It was pointed out that the 1962 Reference Committee substitute resolution was referred to the Board of Trustees for study and recommendation.

The resolution dealing with the Council on Medical Education which had been referred for study to the Council of the MSMA House of Delegates was studied. In light of Dr. Wiggins report, it was felt that the first "Resolve" in the resolution should read: "Resolved, That the reference committee on Amendments to Constitution and By-Laws at the next annual session of the AMA be requested by the Delegates of the MSMA to seriously consider a by-laws provision which would guarantee that the majority representation on the Council of Medical Education shall consist of physicians engaged primarily in the private practice of medicine, and also trained, experienced and participating in graduate and postgraduate medical education programs in private community hospitals, and . . ."

On motion of Dr. Kerr, duly seconded, this resolution with the changes was approved for submission to the AMA House of Delegates.

Dr. Peterson reported on a meeting on March 13 at an AMA Congress on Pharmacy and Medicine, which was attended by 340 persons, not enough of whom were physicians. He said that the question of physicians dispensing medicine and that of physicians holding an interest in pharmacies were discussed, but no conclusions were drawn. He suggested that there be a Missouri Liaison Committee with the pharmacists. He also suggested that there should be more Missouri physicians on Committees and Councils of the AMA.

Dr. Peterson reported attending a meeting of representatives of eight states with Mr. Proctor Carter regarding drug programs. He said that from reports of other states he felt the Kerr-Mills act drug program was functioning well in Missouri. He pointed out that in the beginning 13 drugs were covered and that now 34 are. He said costs were based on wholesale price, plus $1.00. He pointed out that pharmacists claim that they are not receiving enough from the plan as the filling of any prescription costs from $1.00 to $1.35. He said that 57 physicians in Missouri dispense drugs and that they now receive the same compensation as do the druggists, namely, cost plus $1.00 per prescription.

Dr. Furlow reported on a meeting of MSMA representatives with the AMA Committee on Osteopathy and Medicine in Chicago April 19. It was pointed out that another meeting will be held during the AMA session in June. Dr. Furlow plans to attend that session and will report any action at the next Council meeting.

Newly elected MSMA Treasurer, Dr. Walter R. Gunn, and Council Chairman, Dr. Hector W. Benoit, Jr., confer with Mrs. Bert Thomas of the Executive Office staff concerning the agenda for the first meeting of the new Council.

A request from the Student American Medical Association for continuation of the $100 sustaining membership was presented. On motion of Dr. Benoit, duly seconded, this was approved and approved to be a part of the Annual MSMA budget.

A request for assistance to send delegates from the University of Missouri Medical School to their Student AMA session in 1964 was presented. On motion, duly seconded, an allowance of $75.00 was approved and was approved to be included in future MSMA annual budgets.

A letter from the AMA concerning committees of states to work with committees of nurses was presented. On motion of Dr. Benoit, duly seconded, it was voted that the President be authorized to appoint a committee of not more than seven to meet with representatives of the Missouri Nursing Association when requested.

Dr. Furlow suggested that the presence of the immediate Past President would be of benefit to the Council. On motion of Dr. Kerr, duly seconded, it was voted to invite the immediate Past President to Council meetings this year and consider a by-law change at the next Annual Session.

Dr. Furlow called attention to the inconsistency of using the Missouri River as a north and south division of the state, especially in regard to elected officers of the Association. He pointed out that Councilor Districts 1, 2, 4 and 5 had 1,076 members; that Districts 6, 8, 9 and 10 had 695 members; that District 3 had 1,311 members and District 7 had 792. He suggested that such a division was much more appropriate for future House actions than the method of using the Missouri River as the dividing line between North and South. Dr. Whitener pointed out that he was considered as elected from south of the Missouri River. Dr. Furlow moved that this suggestion be made to the House of Delegates, which was seconded. A motion to table, seconded, lost on vote, and the original motion was passed.

Mr. O'Brien called attention to the resolution that was passed by the House of Delegates concerning inviting the AMA to hold a session in St. Louis. On motion of Dr. Benoit, duly seconded, it was voted to invite the AMA to meet in St. Louis at an early time.

Mr. McIntyre reported on meetings since the Annual Session. He told of the work of the Placement Bureau of the Association and discussed the work of the Sears-Roebuck Foundation, which does surveying of localities wanting a physician and gives advice to them on building offices for doctors. He reported a meeting of the Missouri Health Council held April 17 at the University of Missouri Medical School which had for its subject "Health Care and Its Costs." He said that hospital care, public health, mental health and the vendor program were discussed. He called attention to the Spring Clinical Conference to be held at the University of Missouri on May 20 and 21. He told of the Central Missouri Area Medical meeting at Whiteman Air Force Base on May 6. He called attention, as had Dr. McCraw and Mr. Schnedler to the two-day visit of Dr. Annis in Springfield on May 21-22.

The resolution passed by the House of Delegates concerning a home for aged or incapacitated physicians was discussed but it was felt that the intent of the resolution was not clear enough and action was delayed until more information could be obtained.

The resignation of Dr. Harry Greene as Councilor of the Second District was presented, together with correspondence with delegates from that District. Since there was no consensus on an appointee, it was felt that another attempt should be made, probably through presidents of the component societies, and action be delayed.

Dr. Kerr gave the following report for the Committee on Tuberculosis:

(See official report in Committee Section)

On motion of Dr. Benoit, duly seconded, the report was accepted.

The report of the Referenee Committee of the House of Delegates concerning a branch office in Jefferson City was discussed. On motion of Dr. Furlow, duly seconded, it was voted that the Chairman of the Council appoint a committee, one representative from each District, who has served as President, Councilor or Speaker of the House, to study the report and to present the information requested at the earliest possible date. On second, the motion carried.

Dr. Matthews outlined the proposed program for the 1965 session. He discussed the timing of the Annual Session, stating that some thought had been given to beginning them on Thursday evening and ending with the Delegate's breakfast on Sunday morning. After determining that such dates could be obtained for 1966, on motion of Dr. Benoit, duly seconded, it was voted to hold the 1966 session March 24 to 27, and the 1967 session March 18 to 22.

The Councilors reported on activities in their districts.

A request from Dr. Carl D. Siegel, Chairman of the Committee on Civil Defense Disaster Medical Care, that $100 be made available for a program at the University of Missouri on Civil Defense. On motion of Dr. Fisher, duly seconded, this was approved. A request from Dr. Siegel for $56 to defray some of the expense of attending an HEW meeting on radiological defense, on motion of Dr. Benoit, duly seconded, was approved.

Dr. Furlow reported that the Woman's Auxiliary to the MSMA has officially turned over to the Foundation their Loan Fund Account including approximately $4,000 in cash and some $8,000 in outstanding loans.

It was decided that the next meeting of the Council would be held September 26 and 27.

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Meeting of September 26 and 27, 1964

Byron M. Stuart, M.D., Boonville, Chairman, called the meeting to order. Those present were: Drs. Stuart; Joseph L. Fisher, St. Joseph; David N. Kerr, St. Louis; Paul H. Rother, St. Charles; Rolla B. Wray, Nevada; Hector W. Benoit, Kansas City; Doyle C. McCraw, Bolivar; E. A. Stricker, St. James; W. D. English, Cardwell; Leonard T. Furlow, St. Louis; Paul R. Whitener, St. Louis; John I. Matthews, Jefferson City; Charles R. Doyle, St. Louis; Kenneth C. Hollweg, Kansas City; Vernon E. Wilson, Columbia; H. M. Hardwicke, Jefferson City; James G. Janney, St. Louis; William R. Allen, Jefferson City; James N. Haddock, St. Louis; J. Loren Washburn, Versailles; T. J. Cooper, St. Louis; Lysle M. Bach, Hannibal; Messrs. John W. Noble, Kennett; Gary Schnedler, Springfield; Allen Smith, Kensas City; Hollister Smith, St. Louis; Edgar Mothershead, St. Louis; Lemoine Skinner, Jordan Singleton, Ray McIntyre, Tom P. Fox and T. R. O'Brien, St. Louis.

Since the resignation of Dr. Greene of Hannibal, 2nd Councilor District, which was discussed at the last meeting of the Council, the delegates of the county societies in that district were again contacted and several names were suggested as their choice. Dr. Lysle M. Bach, Hannibal, received the majority of the votes. On motion of Dr. Whitener, duly seconded, Dr. Bach was appointed as Councilor of the 2nd District to fill the unexpired term of Dr. Greene, until the next Annual Session in April, 1965, at which time Councilors from the even numbered districts will come up for election.

Dr. Haddock presented the report of the committee on Mental Health for Dr. Forman, the chairman, who was unable to attend.

(See official report in Committee Section)

After considerable discussion regarding the Psychology Clinic in Kennett, on motion of Dr. Benoit, duly seconded, it was decided that a letter be written to the head of this clinic asking that a representative appear before the Council at its next meeting to ascertain whether or not the clinic is complying with the regulations which have been set forth by the Executive Committee as pointed out in the Mental Health Committee's report. Motion carried.

At the suggestion of Dr. McCraw, it was agreed to invite Dr. Ulett to the next Council meeting to explain the Community Mental Health Clinics and where they will be located, along with other things concerning mental health programs in Missouri. On motion of Dr. Benoit, duly seconded, the report of the Committee on Mental Health was approved.

On October 1, 1964, Mr. Allen D. Smith, formerly Director of Communications of Jackson County Medical Society, will join the staff of MSMA as Assistant Editor of MISSOURI MEDICINE and will assist with legislation and other activities dealing with public relations.

Dr. Doyle presented the financial report. On motion of Dr. Doyle, duly seconded, the report was approved as read.

Mr. O'Brien reported on the change of meeting place for the Annual Session from Kansas City to St. Louis—the dates remaining the same, April 4-7, 1965, and the reason for this change. On motion of Dr. Benoit, duly seconded, it was agreed that a letter be directed to the president of the Chamber of Commerce in Kansas City telling them why the meeting is not being held there as originally planned, and that we plan to continue rotation as usual after the 1965 session. Motion passed.

Mr. O'Brien called attention to the fact that the

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Medicare contracts (Medical Care for Departments of Armed Service Personnel) expire on September 30, and that the new contracts had been received. It was explained that O.D.M.C. regards the administrative cost of handling the programs in Missouri, as being too high in comparison with other states. Blue Shield, however, is merely trying to recover its exact costs. After discussion, and on motion of Dr. Furlow, it was agreed that a letter be sent by the Council to Blue Shield stating that it is our feeling that the program should continue under the administration of Blue Shield, but we do not feel we should ask Blue Shield to do so at a loss, using membership dues which were not paid for that purpose. The motion, duly seconded, passed.

Mr. O'Brien reported on the National Conference on Cardiovascular Disease which will be held in Washington, D. C., December 27. On motion of Dr. Furlow, duly seconded, it was agreed that Dr. Janney, Chairman of MSMA Committee on Study of Cardiac Disease, be requested to represent MSMA at the Conference.

Mr. McIntyre presented a report on the number of Missouri University Medical School graduates who have recently located in the following towns: Butler, Odessa, Hannibal, Poplar Bluff, Ironton, Richmond, Plattsburg, West Plains, Kirksville, Harrisonville, Potosi and Bowling Green. Several other young physicians have located at Sedalia and Boonville. He reported on the work the Sears-Roebuck Foundation is doing in helping local communities to build new office buildings to attract physicians. New buildings are under construction at Monroe City, LaBelle and Buckner. On October 11, Bowling Green Community is dedicating the opening of their new office set-up, and introducing two young physicians who recently located there and have rented the new office building. The main speaker for this event will be United States Senator Edward Long, and MSMA was asked to send a representative. Mr. McIntyre was designated to appear on the program as our representative.

He reported also on a number of recent medical society meetings, most of which he attended, as follows: Athletic Injuries Conference at Jackson County last spring; and on August 9, the Butler-Wayne-Ripley Society held a conference on the same subject at Poplar Bluff. On September 2, St. Louis Medical Society had an excellent Athletic Injuries Conference with over 300 in attendance. On September 8, the Jasper County Medical Society met at Joplin and showed a new version of the "Barnstormer film." This is a one hour version and is an excellent and interesting film and is recommended for showing at all county medical society meetings in Missouri. On September 15, he attended a meeting at Kennett. On September 16, he attended a meeting of six or seven counties at Sedalia at which Dr. Max Berry of Kansas City was the speaker. September 20, he participated in the Greene County Annual Golf Tournament. On September 22, he attended the annual meeting of the Missouri Health Council in Jefferson City on School Health, with Dr. Guy Magness, who was on the program. He reported on a number of important meetings coming up in the near future, such as, the Southwest Clinical Society, Kansas City, September 28, 29, 30 and 31; University of Missouri Conference on Alcoholism, October 7 and 8; Missouri Academy of General Practice, Hotel Chase, St. Louis, October 30-November 1, Annual Session, at which Dr. McCraw will be installed as President on Saturday night.

The especially honored guests at the Annual Presidents' Banquet were the outgoing and incoming presidents of MSMA. (l. to r.) Dr. and Mrs. Leonard T. Furlow and Mrs. and Dr. Paul R. Whitener.

Dr. Stuart called attention to the Preliminary Report of the Special Committee of the Council regarding a Jefferson City Branch Office. He stated that this report was for information only, and that the committee would meet again later and present a report at that time.

A statement in opposition to H.R. 11865, the King-Anderson bill, signed by President Leonard T. Furlow, was sent to Washington, and was entered in the official report of the Senate Committee on Finance.

Dr. Benoit brought up the subject of the $5.00 assessment to be levied on the membership beginning in 1965 to assist in the payment of legal fees and costs incurred in litigation. A resolution was passed by the House of Delegates at the 1964 session approving this assessment, and that the disbursement of such funds be determined by the Council. After discussion, and on motion of Dr. Benoit, duly seconded, it was agreed that the chairman of the Council should appoint a committee of three to study the disbursement of the assessment; also, that AMA be asked to assist with financial help in this endeavor. The following members of the Council were appointed to serve on this committee: Drs. Doyle, Chairman; Benoit and English.

Dr. Whitener presented the following report of the Committee on Medicine and Religion:

Arne Larson reported history and progress of various faith groups which had sponsored committees on Medicine and Religion. He also reported on the new AMA program to date. Emphasis was placed on the basic plan to organize and function at the local level since each local area has different conditions and problems. It was agreed that the state committee should announce the program and offer assistance to interested county societies. Administrative problems and communications between hospital chaplain and medical staff were mentioned, as they relate to patients. Publications on subjects related to medicine and religion were distributed to those present. Various faiths publish such pamphlets and magazines. Chaplains and physicians present agreed on existence of mutual problems with emphasis on communications between the two professional groups.

Reference was made to the increasing number of post-graduate training programs for clergy, including counselling. Reference was made also to the need for pre-marriage and marriage counselling programs in medical schools. Often physicians are looked to for such counsel. It was suggested that the Catholic Physicians Guild might be expanded to include other faiths for a program at the local St. Louis level. The American Medical Association will supply copies of an elective course on Medicine and Religion such as is being conducted at the University of Kansas Medical Center, March 7, 1964 through May 16, 1964.

It was stated that the film, "One Who Heals" is very good for an introduction program at the local level. It was agreed that the next meeting should be called in the near future to further implement AMA program outlined in the loose leaf binder, offering program to local county societies.

After discussion, on motion of Dr. Stuart, duly seconded, the report was accepted.

Dr. Whitener then requested that another chairman be appointed to take his place on the committee, due to the press of other duties, however, he would be willing to remain on the committee as a member. A new chairman will be appointed later.

Dr. Cooper presented a request from the Missouri Association of Blood Banks for financial assistance from the Association to help in a program of workshops being held in the rural areas throughout the state. These workshops help to teach and train technicians to help identify different blood types. After considerable discussion, pro and con, on motion of Dr. McCraw, duly seconded, it was agreed that the Association donate $125.00 for use of the Missouri Association of Blood Banks program. Dr. Benoit protested this problem regarding pathologists and technologists and made a motion, duly seconded, "That the Committee on Laboratory Medicine of the Association investigate this problem and to call upon Dr. Hardwicke to provide them with any information that would be of help to the committee." Motion passed.

An emergency meeting of the Public Service Committee was held on Friday, September 25, prior to the Council meeting, to discuss the National Advertising Campaign of the AMA as it relates to Missouri. The Report of the Committee was read by Dr. Benoit, Chairman. A copy of the Committee report is on file at the office. On motion of Dr. Furlow, duly seconded, the report was adopted. It was suggested that a telegram or night letter be sent to Dr. Blasingame and to the Board of Trustees at their home addresses as soon as possible. The telegram was sent on Sunday, September 25, and a letter was sent to all State Medical Associations on September 26.

Mr. O'Brien presented a letter from the College of American Pathologists requesting an opinion as to whether or not the Association would recommend that the College of American Pathologists list a vacancy in their Placement Bureau for a professor of clinical pathology and director of laboratories at an osteopathic hospital.

He also presented a copy of a letter written by Dr. Furlow to Dr. Blasingame of the AMA regarding the actions of the AMA Committee on Osteopathy and Medicine and suggesting that the Committee work with the Council on Medical Ethics to remove all restrictions and permit M.D.'s to give lectures, present papers, etc., to osteopathic groups without restrictions as to their scientific training. The letter also suggested that a member of Missouri should be placed on this Committee.

Another letter was presented which was sent to Dr. Wilson at the University of Missouri inviting members of the faculty of the medical school to participate in one of the programs of the Normandy Osteopathic Hospital during the Fall of 1964. Dr. Wilson replied to this invitation stating it would be referred to the Council.

Delegates discuss policies and programs of organized medicine in Missouri during the final session of the House. The speaker shown standing in the center of this picture is Dr. Albert M. Repetto of St. Louis.

Another letter was presented from the Upsher Laboratories of Kansas City for a decision of the Council as to whether or not a Pathologist could act as consultant pathologist to osteopathic hospitals.

After considerable deliberation on the above correspondence, a motion was made by Dr. Benoit, duly seconded, that a resolution be drawn up by the Council to be presented to the House of Delegates for a clear definition on the part of the House regarding members speaking before osteopathic organizations, or acting as consultants in osteopathic hospitals or schools, or participating in teaching programs in osteopathic institutions. Motion passed.

Dr. Benoit then made the following motion, duly seconded, (1) to defer any actions on the request made by Dr. Wilson regarding the Normandy Osteopathic Hospital until after the House meets in the Spring of 1965; (2) that Dr. Upsher and the American Pathological Society requests be deferred until the House meets in April, 1965. The motions were adopted.

Mr. O'Brien discussed the previous program which was held in May, 1964. The original idea for this meeting was to discuss politics, the handling of dues and other information relating to the duties of new officers of county medical societies and to help the headquarters office in instructing new officers as to their duties. Since it was too late in the year for this sort of meeting, it was decided to make it entirely political in view of the primary elections in August. However, the purpose of the discussion now is to decide what should be done about future meetings for presidents and secretaries and other officers of County Societies. It was brought out that this meeting should be more of a workshop for the smaller county societies, since the larger societies have executive secretaries who take care of the various

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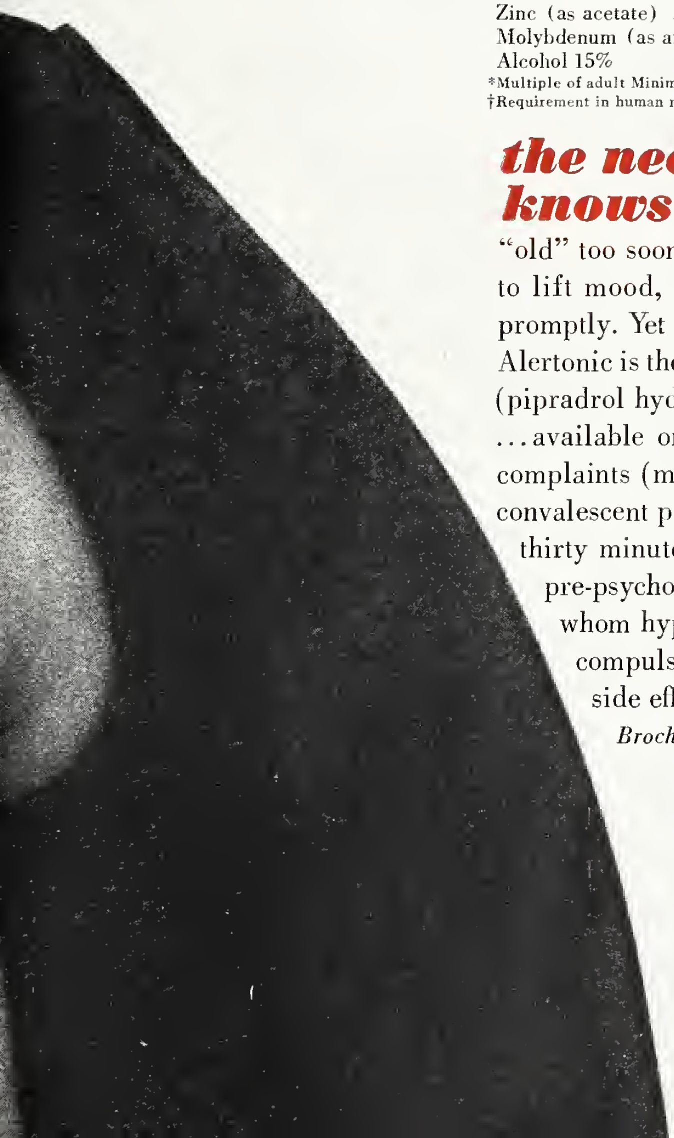

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duties. After discussion, on motion of Dr. Benoit, duly seconded, it was decided that the MSMA staff should prepare a program for approval of the Council and the meeting should be held in the Fall of 1965, after the Legislative Assembly adjourns.

Mr. O'Brien reported on a letter received from Miss Cora Cox, Executive Secretary of the Missouri Pharmaceutical Association in July, 1964, requesting that a liaison or interprofessional relations committee at the state level be appointed to meet with the pharmacists. After discussion and on motion of Dr. Kerr, duly seconded, it was agreed that a Liaison Committee be appointed to meet with a committee of the Pharmaceutical Association to discuss problems of mutual interest. The following physicians were appointed to serve on the Liaison Committee: Drs. Stanley Peterson, Springfield, Chairman; Milton B. Ozar, Kansas City; and David N. Kerr, St. Louis.

Mr. O'Brien gave a report on possible future legislation which may be introduced in the 1965 General Assembly. He discussed "Regulations for Radiation Protection" which would be administered by the Division of Health. Dr. Eagleton, Chairman, MSMA Committee on Radiology and Ionizing Radiation, attended a hearing in late August and reported the regulations were acceptable with few minor changes and that they were approved by X-Ray Departments of the three universities in the State and practicing radiologists.

A portion of the head table at the Annual Presidents' Banquet. (l. to r.) Mrs. and Dr. Paul R. Whitener, Mrs. and Dr. John I. Matthews, Mrs. and Dr. Stanley S. Peterson.

He also discussed the Kerr-Mills act in Missouri, S.B. 148, vetoed by the Governor in the last session because of budgetary reasons, will possibly be revised and introduced again in the 1965 session. He reported on a letter from Mr. Panhorst, head of the Hospital Association Legislation Committee, suggesting that a liaison committee be developed between our two groups to discuss this and any other legislation which may be of interest to both groups. Mr. O'Brien suggested that a Liaison Committee of three to five people be appointed so that they could meet with a group from the Hospital Association and that a meeting should be held prior to the next Council meeting.

On motion of Dr. Benoit, duly seconded, it was agreed to appoint a Liaison Committee to meet with the Hospital Association Committee. This committee to be composed of the President, President-elect, Chairman of the Council and one or two other Councilors.

Mr. O'Brien reported that efforts may be made to place Blue Cross and Blue Shield under the supervision of the Insurance Department of the State. He also reported that the chiropractors will definitely make another effort in 1965 to change their act.

He spoke briefly about the Good Samaritan bill H.B. 47, which was not adopted in 1963. He stated it would undoubtedly come up again in the 1965 session and called attention to the Resolution which was passed by the House of Delegates at the 1964 session which states that the Association sponsor such legislation and also that statutes enacted in other states relating to this subject be studied by the Council prior to introduction of such legislation.

He also discussed the Medical Examiners System in lieu of the office of Coroner. He recalled that a model act had been prepared by the Committee on Laboratory Medicine and submitted to the Missouri Bar Association for review and approval, and that we have been unable to secure the approval of the Bar Association up to this time. He suggested that the Laboratory Medicine Committee meet to review this legislation prior to the next Council meeting.

He also reviewed the possibility of revisions in the Medical Practice Act (Little Hoover Commission wants to change make-up of Board); possible legislation on the Battered Child; etc. He also mentioned that the Division of Mental Diseases, Missouri University, State Division of Health and perhaps the Division of Welfare will all request larger appropriations than in 1963, all of which will amount to a large sum of money.

Dr. Benoit suggested that the Laboratory Medicine Committee be directed to work on the Medical Examiners System act and try to get the Bar Association interested in working on it so that it will be ready to be introduced in the 1967 session, since it will probably be too late to get it worked out before that time.

Dr. Stuart appointed the following to serve on the Budget Committee: Drs. Doyle, Chairman, Furlow, Benoit, McCraw, English and Stuart. The Budget Committee will meet on Friday, December 11, prior to the Council meeting.

Dr. Janney gave the following report on the Committee on Cardiac Disease:

(See official report in Committee Section)

Dr. Janney called attention to the three recommendations contained in the Committee report regarding the Rheumatic Fever Secondary Prevention program. After discussion, on motion of Dr. Stricker, duly seconded, it was agreed that the report be accepted and that MSMA should help to get the Rheumatic Fever program going.

Dr. Matthews gave a résumé of the proposed annual session program for the 1965 session. He reported that there are a few spots still to be filled but that it is shaping up nicely and should be an interesting program. He also mentioned that the exhibits will be in the basement exhibit hall of the Chase Hotel this time and in view of that, we could handle a few more exhibitors than last year, which would help us financially, as last year we were limited on space.

On motion of Dr. Furlow, duly seconded, it was agreed that the Council prepare a resolution regarding the tragic death of Mrs. Calkins, President of the Woman's Auxiliary of MSMA, and send it to the family. Dr.

Furlow also suggested that since this was the first time in many years that a president of the AMA died in office, that a letter should be sent to the new president, Dr. Ward, stating that we would be happy to cooperate with him in any way.

Mr. O'Brien called attention to the fact that the present assessment of $7.50 per member for the Foundation runs out in 1965. He suggested that the Budget Committee and the Council, at the next meeting should decide what to do about that for presentation to the next House of Delegates.

Mr. McIntyre gave a brief summary of the financial standing of the Foundation to date as follows: 31 loans were granted to medical students since June, 1964—26 to Missouri Universty students; 4 to St. Louis University students and 1 to a Tulane University student making a total of $14,025.00. Balance on hand as of now is $18,000. He also reported on the Woman's Auxiliary Student Loan Fund which has been turned over to the Association as follows: Cash—$4,031.32; outstanding loans—10; nine loans in process of being paid back. Mr. McIntyre also mentioned that a letter will probably be sent to the membership in the near future asking for personal donations to the Foundation to help supplement the money from the assessment, most of which has been collected so far this year.

Dr. Matthews suggested that a letter be sent to the secretaries of the county societies asking that the county society as such make a donation if there is excess cash in the treasury. Mr. McIntyre reported that there would be a more detailed report available at the next Council meeting for the Budget Committee's information. Mr. McIntyre also reported that a letter of appreciation was received from Dr. Mayer of the University of Missouri Medical School thanking us for the help given to the medical students in need of financial assistance and that without this help, a number of good medical students would not have been able to continue their medical education.

Dr. Hardwicke gave a report on the problems facing the Missouri Division of Health in the next biennium. He stated that more money would be needed to continue the work being done by the Division of Health in helping the practicing physicians in Missouri. Figures would not be available until later, but that a larger appropriation would be needed for the 1965 biennium. He asked the help of the physicians in contacting their legislators on behalf of the Division of Health so that it can continue to serve the physicians in the State of Missouri.

Dr. Wilson reported on the number of students enrolled this fall in the medical school, and also stated that 93 students are now in specialty training. He also mentioned that a film had been prepared by the Student AMA entitled "The Making of a Doctor." He stated that this is a good public relations film and that if any one would like to have a copy of the film it is available at the Medical Center.

The Councilors from the various districts gave reports of activities in their districts.

It was decided that the next Council meeting would be held on December 12 and 13. The Budget Committee will meet on Friday, December 11.

Meeting of December 12 and 13, 1964

Byron M. Stuart, M.D., Boonville, Chairman, presided. Those present were: Drs. Stuart; Lysle M. Bach, Hannibal; David N. Kerr, St. Louis; Paul R. Rother, St. Charles; Rolla B. Wray, Nevada; Hector W. Benoit, Kansas City; Doyle C. McCraw, Bolivar; E. A. Stricker, St. James; W. D. English, Cardwell; Leonard T. Furlow, St. Louis; Paul R. Whitener, St. Louis; John I. Matthews, Jefferson City; Charles R. Doyle, St. Louis; Joseph V. Finnegan, St. Louis; Stanley S. Peterson, Springfield; Kenneth C. Hollweg, Kansas City; James A. Kinder, Cape Girardeau; James N. Haddock, Robert D. Brookes, St. Louis; Vernon E. Wilson, Columbia; H. M. Hardwicke, Jefferson City; Clen O. Turner, Springfield; Ceorge A. Ulett, Jefferson City; Charles B. Wheeler, Kansas City; Messrs. John W. Noble, Kennett; Gary Schnedler, Springfield; Hollister Smith, St. Louis; Edgar Mothershead, St. Louis; Lemoine Skinner, Jr., Jordan Singleton, Allen Smith, Tom P. Fox, Ray McIntyre, T. R. O'Brien and Miss Peggy Heilig, St. Louis.

Dr. Turner, Chairman of the Greene County Medical Society's Liaison Committee on Osteopathy and Medicine, reported to the Council that the Public Policy Committee of Greene County Medical Society should recommend to the State Association that a joint Liaison group consisting of selected and appointed members from the State Association of both the medical and osteopathic groups be formed for the purpose of discussing any problems common to both, in the hope of facilitating future cooperative action. After discussion, and on motion of Dr. Furlow, seconded by Dr. Wray, it was decided that a Liaison Committee be formed to consider these problems. Motion passed with one dissenting vote (Dr. Kerr).

Dr. Doyle presented the Treasurer's Report, which was accepted as read.

The following budget for 1965 was presented by Dr. Doyle, and on motion of Dr. Doyle, duly seconded was approved:

Salaries	$ 74,500.00
Office Rent & Light	4,700.00
Postage	5,000.00
Office Supplies	5,000.00
Journal Expense	34,000.00
Telephone & Telegraph	2,500.00
Insurance-Employees Pension Plan	8,000.00
Legal & Professional Fees	4,000.00
Taxes—Payroll	2,000.00
Travel Expense	7,000.00
Committee Expense	47,300.00
Furniture & Fixtures	500.00
General Expense	3,000.00
MSMF Expense—Assessment	25,500.00
K. C. Blood Bank	17,700.00
MSMF Expense	1,500.00
Total	$242,200.00

In addition, the Budget Committee recommends that (1) a study be made regarding the possibility of improving the retirement income program for our employees; (2) that the Association approve the procurement or continuation of Blue Cross and Blue Shield for retired employees; and (3) that we investigate accident insurance for those individuals who are traveling on official business for the Association, this to include Councilors and Officers, Committee Members, Officers of the Woman's Auxiliary, etc., details to be worked out by the Association office. Dr. Doyle moved the adoption

(Continued on page 542)

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Volume 62, Number 7—July, 1965

Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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Remarks of Leonard T. Furlow, M.D., Retiring President

Mr. Speaker, Members of the House of Delegates: It has been a rewarding personal experience to serve as your president. But it has been more than simply an honor and a privilege. I will always be grateful for the opportunity I have had to gain a fuller understanding of the need for individual physicians and component societies to take a constant interest in the work of the Association, and to make every possible contribution of time and effort to its activities.

I want to take this opportunity to remember three persons whose deaths during the year brought sorrow to the medical profession. Two of them—Mrs. Delevan Calkins, president of the state auxiliary, and Dr. Ralph Duncan, a vice president of the Association—were personal friends of many of us. I know that the members of the House join me in expressing our deepest sympathies to their families. Also, of course, I want to mention the untimely death of Dr. Norman Welch, president of the AMA. Dr. Welch was an outstanding leader of organized medicine in this nation for many years, and he will be remembered warmly by all who knew him.

You have probably noticed that a long-time friend is not with us at this meeting. After 34 years as Editor of Missouri Medicine, Miss Helen Penn retired from the Association staff last fall. Miss Penn was not only capable and devoted—she had a sincere interest in the Association and its members, and she is missed by the staff and by all of us who were acquainted with her.

For the second time another very important person is not with us for our annual meeting. I know that all of you join me in wishing Tom O'Brien a speedy and complete recovery. Yet his absence at this time compels us to consider with special concern a situation we have substantially relied on him to handle for us in the past—the relationship between the medical profession and our state legislature.

I know that Tom would agree with me when I say that the importance of this relationship and the manner in which we treat it cannot be overemphasized. For years, we have been content in the knowledge that Tom was looking after the interests of medicine in Jefferson City, and that our only real responsibility was an occasional letter-writing campaign or an infrequent appearance before a legislative committee.

When I speak of the interests of medicine, I want to make it very clear that I am talking essentially about the interests of our patients, the public interest of the people of Missouri. The reason our relationship over the years with the General Assembly has been so effective—the reason Tom's work has been so successful—is that we have not been a lobbying organization in the ordinary sense of the term. We have rather contributed sound scientific information and professional understanding to the deliberations of the legislature, and we have, in consequence, created and maintained a relationship of mutual confidence and trust.

In recent weeks, Allen Smith, ably assisted by Tom Fox, has done a truly commendable job filling in for Tom in Jefferson City—and we *all* owe a debt of gratitude to Dr. Jack Matthews for the great help he has given in these trying times. But we cannot leave our entire responsibility in this area to one or two people. When the Council met in February, they very wisely decided to create a special committee to be concerned with state legislation. However, although this committee can keep aware of proposed legislation affecting the medical profession and can guide our activities concerning such bills, it is equally important that the officers and members of county societies become knowledgable in these matters.

One of the *most important things* each of us can do is explain our position on legislation which concerns medicine to our own local legislators—not just to committees and not just when a bill comes up for a vote. I urge you and your colleagues to accept that responsibility immediately.

There are now bills before the General Assembly which should be of real concern to Missouri physicians. One would create a Board to certify, register and regulate the practice of Psychology. Another would create a state board of registration for physical therapy. Personally, I believe that if members of these professions are to be licensed, it should be done by a board subsidiary to the Board of Healing Arts, in order to insure against any public confusion between the abilities of members of these professions and licensed physicians. In addition, bills have been introduced which would bring chiropractors under the definition of "Physician" in state workmen's compensation laws. Although legislation such as this doesn't get a lot of public attention, it can have a grave effect on our profession and on the public unless we respond to the danger with alert concern.

Within the next day or two, the House of Representatives will begin considering H.R. 6675, the health care plan for the aged which was approved recently by the Ways and Means Committee by a vote of 17 to 8.

This plan would provide hospitalization for 60 days per confinement for everyone over 65, regardless of income or employment, with an additional 20 days in a nursing home after release from the hospital. The patient would pay the first $40 of the cost.

For those who choose, there would also be a supplemental plan covering physicians' services in and out of the hospital, drugs in the hospital or nursing home, X-rays, laboratory tests, ambulance service and other similar services and supplies. Persons participating in this part of the program would pay an enrollment fee of $3 per month, the first $50 of their bill and 20 per cent of the remaining charges.

The bill also provides for far-reaching changes in the Kerr-Mills program, including increased federal funds, a standardization of eligibility requirements welfare recipients. In addition, there would be a 7 per cent increase in all monthly Social Security benefit payments.

As you would expect, the cost of this program would be enormous—close to six billion dollars a year in benefits alone. According to its proponents, most of the cost will be covered by increases in the payroll tax withheld for Social Security. The payroll base will be raised from $4800 to $5600, and the rate from the current 3.6 per cent to 4.5 per cent on both employee and employer. It is interesting to note that for the person who make $5600 a year, this will be an increase of over $70 a year in his Social Security tax. Besides this tax increase, it is estimated that at least one billion dollars will have to be taken from the general Treasury fund annually to pay for the program. No mention is made by advocates of this program of how this additional money is to be raised.

It would be foolish for us to discount the *very likely probability* that this bill *will be passed* by both houses of Congress. The fact that it was approved so easily by the Ways and Means Committee and the present makeup of the Congress certainly point to that result. Organized medicine has fought against tremendous odds in recent years to prevent the establishment of such a program, and I think we should be proud of our efforts. If this plan should be put into effect, however, we should still have a responsibility to both our profession and the public. Whenever the regulations of the program interfere in any way with the essential freedom of our profession—we should make this known to the patients concerned, to our communities and to our representatives in Congress. We should become self-appointed "watchdogs," ready to help our friends in Congress who may work in future years to revise the program, and prepared for almost certain attempts to enlarge and increase the scope of government health care to cover larger and larger segments of our population.

As I am sure you are already aware, the current sessions of the House of Delegates will be considering a number of matters of the greatest importance to the Association, some of which I would like to discuss. I have first, however, to mention particularly two developments that have brought national recognition to our Missouri State Medical Association.

In June of this year, Mrs. Richard A. Sutter of St. Louis County will be installed as President of the Woman's Auxiliary to AMA. On behalf of the Association, I want to say how proud we are of Betty Sutter and her many contributions to the Auxiliary and to her community. In cooperation with the Missouri delegation to the Auxiliary convention, we are planning a reception at the June session of the AMA to honor Mrs. Sutter. In the Report of the Council, there will be a request for the expenditure involved and I urge you to approve this request.

Missouri will have another great honor at the AMA convention this summer, when Dr. Durward Hall of Springfield is nominated for president-elect of the national association. We all know the qualifications, the experience and the ability Dr. Hall would bring to this job, and we want to do everything possible to *insure* his election. Therefore, the Council will also request the authorization of funds for a reception at the convention in New York, and I also urge you to approve this request.

During the past four years, our student loan fund has made an outstanding record in providing financial aid to deserving Missouri medical students. A total of 330 loans, amounting to $152,195, have been made to 134 students.

At this time, we must decide whether or not to continue the annual assessment for MSMF, which was approved for a period of three years by the 1962 House of Delegates. I don't believe there can be any doubt about the worth of the loan fund. There are *few* things we can do as a service to the public and our profession that are as important as helping financially-pressed students complete their medical training.

From a practical standpoint, the Foundation has not yet reached the point where it can operate on a revolving basis without supplementary financial contributions, nor does it receive sufficient funds from voluntary gifts to operate without the assessment. I hope that you will act favorably on the resolution to continue this assessment for MSMF, at its current rate, for the next three years.

Questions concerning relationships between doctors of medicine and doctors of osteopathy have been discussed by the Council at each of its meetings during the year. In 1962, the House of Delegates adopted a resolution in accord with a 1961 ruling of the Judicial Council of AMA stating when consultation between osteopathic and M.D. physicians was ethical. Since that time, there has been much discussion as to whether or not this resolution also applied to association between doctors of medicine and osteopathic groups and institutions.

I believe that our major concern should be the *care* given a *patient*—whether he's *our* patient or an osteopath's patient, whether he's in *our* hospital or an osteopathic hospital. I believe, too, that if we perform consultative services in their hospitals or if we participate in scientific educational programs before osteopathic groups, we are serving the goal of superior patient care. I think we are all capable of discovering whether or not an osteopathic group follows scientific and ethical principles of practice, and I favor the resolution in your handbook which defines as ethical associations between doctors of medicine and such osteopathic groups.

In accordance with a resolution passed last year, I appointed a special committee to study delegate representation in the House, and I want to commend this committee for their efforts. They considered a number of proposals and were striving at all times to be fair to everyone concerned, large and small societies alike. I would like to point out, as a member of a large society, that one of the major reasons for our wanting a larger number of delegates is that we try to interest as many of our members as we can in the work of the Association, and we have found that, once a member becomes interested, he doesn't want to stay on the sidelines. Yet the "old faithfuls" also deserve their posts as delegates and alternates. I hope you will agree with me that the recommendation of the committee is extremely fair —no society will lose a delegate it now has, while the larger societies' representation will increase in fairer proportion to the size of their membership. Also in compliance with action taken by the House last year, a study has been made concerning whether a branch office of the Association should be opened in Jefferson City, whether the entire office should be moved to Jefferson City or whether the status quo should be maintained. The report and recommendations of that committee were sent to all societies. They are also included in the Delegates' Handbook, and I assume you are familiar with them.

As I have stated before, I am firmly opposed to either moving the Association office or opening a branch office in Jefferson City. Since I believe those who disagree with me favor the establishment of a branch office, I want to state my reasons for opposing such a move.

The first is financial; our annual dues would have to be increased by at least $10, probably more. Secondly, I believe that the majority of Association members are satisfied with the present location, and I sincerely hope that their wishes will be reflected in the vote on this question, so that it may be considered finally settled. Thirdly, we have talked to state legislators from all areas of the state, and their agreed opinion is that the Association is more effective without an office in the capital. I certainly agree. After all, we are not an industry or a union, but a professional group which is concerned with legislation affecting our profession because it, in turn, affects our patients. As I said earlier in these remarks, we are not a lobby. Let's not take a step that might make us look like one.

The Council will present a resolution today which favors the maintenance of the status quo. If you have not been instructed by your society to vote one way or another on this matter, I want to urge you to study the committee report with care. I believe it will convince you that a vote for the status quo is in the best interests of the Association and its component societies.

Now, I want to make an additional suggestion for your consideration. Even though the president-elect sits on the Council, it is astounding, when he becomes president, how many times he must turn to the immediate past president for advice and information.

I believe that the president and the Council would benefit from the participation of the immediate past president as a full member of the Council for the year following his term of office, and I ask that this suggestion be referred to the proper reference committee for their consideration.

(Continued on page 540)

LOMOTIL *Pharmacologic Activit*

The significant pharmacologic action
of Lomotil are summarized as follows

Evidence indicates that Lomotil act
directly on the intestinal musculature t
inhibit excess peristalsis.

Lomotil is not known to inhibit nonpr
pulsive intestinal movements.

Roentgenograms demonstrate that thi
activity occurs within two hours afte
oral administration and persists for
least six hours.

Comparative studies in the rat sho
Lomotil to be more effective in inhibi
ing fecal excretion than either codein
or morphine.

Analgesic, anticholinergic, mydriati
and gastric secretory effects have n
been significant.

Reduction of propulsive motility wit
Lomotil relieves spasm and crampin
allows physiologic absorption of flu
and reduces frequency of evacuations
provide prompt, symptomatic control
virtually all diarrheas.

LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride (Warning: May be habit forming)	2.5 mg.
atropine sulfate	0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea

Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:
20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

Remarks of Paul R. Whitener, M.D., Incoming President

Mr. Speaker, members of the House of Delegates and my fellow practitioners of Medicine in the State of Missouri: It is with fear and trembling that I address you at this important annual session, after which I shall have the responsibility of serving as your president. I do not pretend that I feel myself adequate to do the job that will need doing. I shall not try to do it by myself.

First, I shall rely for counsel and for help on my predecessor Leonard Furlow, whose term of office saw steady progress in basic programs of the Association as well as steady strengthening of the organization of MSMA. I hope this House will adopt Dr. Furlow's recommendation that the immediate past president be made a full member of the Council. I hope this selfishly, because I shall need the increased support Dr. Furlow's counsel will provide under such an arrangement. I hope it also for the stability and continuity of the MSMA program in years ahead.

Second, I know I can count on the continuing support of all officers, councilors and committee chairmen, together with the faithful service of our excellent staff—soon, we hope, to be in full force again with the return of Tom O'Brien to the job.

It is customary for an incoming president to outline for the House of Delegates his views on issues to be considered by the House and to present his thoughts regarding the program of the association in the year ahead.

As to the major matters on which you will deliberate at this 107th session of the House of Delegates, I have very little to add to the material in your delegates' handbooks and to the points made so clearly by Dr. Furlow in his preceding remarks. I wish to emphasize, however, that I concur emphatically in the recommendations made to you by Dr. Furlow and I should like very briefly and specifically to re-state them.

It is important to the prestige of our association in the national Councils of organized medicine that we approve the request for funds to put on the reception for Mrs. Richard Sutter at the June meeting of the American Medical Association and that we make adequate financial provision to support the nomination of Dr. Durward Hall for AMA president-elect. It is, I believe, unprecedented in the history of Missouri medicine that we should have at one and the same time a president of the National Woman's Auxiliary and a strong and highly regarded nominee for the highest office of the AMA itself.

I also strongly second Dr. Furlow's recommendation that the assessment for the Missouri State Medical Foundation be continued at its current rate for another three years.

The resolution in your handbook relating to the ethical association of doctors of medicine with osteopathic groups should, I feel, be adopted once and for all to resolve this problem realistically in the interest of the people of Missouri. Again, I should like to strongly second Dr. Furlow's recommendations regarding fairer representation of larger societies in the House of Delegates and the maintenance of the status quo in the matter of the state office.

Turning now to the program of the Association in the coming year, I should like to consider with you briefly the problems and the opportunities that lie ahead as I see them.

First, for the problems. As we are all vividly aware, the national House of Representatives is on the point of taking action on a composite and complex measure profoundly affecting the ways in which health care is to be financed and provided for persons over 65, for disabled persons, for dependent children and for welfare recipients generally. It is too early for us realistically to assess in detail what the impact of this legislation will prove to be should the Congress adopt the measure, as seems likely, in its present form.

We may, however, assume one thing for certain. The implementation of such a far-reaching Federal program will raise an infinite number of complex problems. Meeting these problems will demand of American medicine the greatest degree of strength, courage, insight and patience in negotiation. These qualities on our part will be essential if we hope to channel new political and social forces in acceptable directions compatible with the freedom of our profession and the well-being of our patients. The present time demands more of us than has ever been demanded in the past. I am confident that, as the picture is clarified, the doctors of Missouri through their Association will not be found wanting in their contributions to the national efforts of our profession to safeguard values of fundamental importance to medical progress and patient care.

My hope for the year ahead is that we shall respond to this hard new challenge as physicians and as citizens. All other problems before us have secondary importance in relation to this over-riding challenge.

As to the opportunities we may expect to make the most of in the coming year, I should like to emphasize briefly the following.

The year will be, I hope, one of renewed and intensified dedication to our patients. It has been my personal experience that my activity in recent years in the programs of the state Association has enabled me to see more clearly than ever the goal toward which all these programs are finally directed: the goal of better patient care. Scientific advances have brought our profession to the threshold of a wide new opportunity for service. In the next year I hope our Association will direct increased efforts to the fuller realization of the opportunity.

Specifically in this connection, I want to emphasize the importance of strengthening and coordinating programs for continuing medical education. An exploratory meeting was held last February at the University of Missouri at which representatives of MSMA, the Academy of General Practice and the Missouri Division of Health conferred with representatives of the medical school on means for doing a better job in this important task of helping practicing physicians keep abreast of scientific developments.

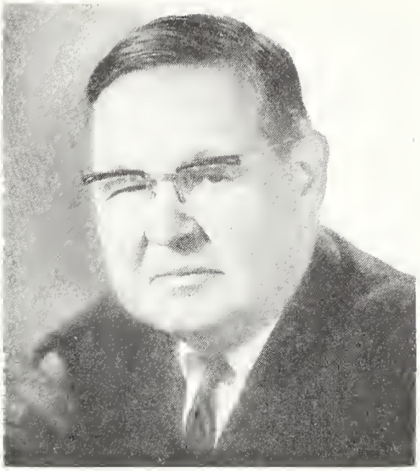
Since that meeting, Dr. Lester Wolcott, chairman of the University Medical School Committee for Continuing Medical Education has drafted a proposal which, I hope, will be thoroughly reviewed by the Council of MSMA at its first meeting following this annual session.

Briefly, the proposal calls for the strengthening of the MSMA Committee on Scientific and Postgraduate Work which has functioned so well under the able chairmanship of Dr. Jack Matthews. I expect to name to the Committee a sufficient number of physicians so that each councilor district is represented. It is thought that the chairman of the Missouri University Committee for Continuing Medical Education might be an ex-officio member of the MSMA committee and equally that the chairman of our committee might serve ex-officio with the university group.

It is further proposed that Councilor District Committees for Continuing Medical Education be set up under the chairmanship of each district's representative on the state committee. The thought here is that by this mechanism the needs and interests of doctors in every area of the state might be regularly assessed and arrangements made to bring to them the kind of continuing educational opportunities they need and want. Finally, it will be considered how the combined resources of the three medical schools in Missouri and other organizations and agencies interested in this project may be brought to bear in a coordinated way to advance the over-all program and to avoid inefficient duplication of effort.

It appears to me that the broad outlines of this suggested approach offer great possibilities for the practicing physicians and for the people of Missouri. I am confident that the Council will give the matter careful deliberation and that the result will be a major forward step for medicine in our state. In the meantime, I should like to ask you as individual physicians representative of your areas to think of nominees for the Councilor District Committees for Continuing Medical Education.

One other broad opportunity that lies before us in the coming year is the chance it brings us between national and state elections to develop closer ties with the communities we serve and with leaders and groups concerned for the progress of our state. In this connection I hope our public service activities may be stepped up in the coming year and that every component society and every individual doctor will feel an obligation to help build a better public understanding of the role of the medical profession in a time of apparent and potentially dangerous change in our social and institutional arrangements affecting health care.



One area in which I should like to see us take an increased initiative in the coming year is in building closer relations between medicine and religion. From time immemorial this relationship has existed. It will continue to exist so long as men approach the overriding mysteries of sickness and health, life and death with reverence and with awe. I hope the year ahead will record progress toward a closer relationship between medicine and the clergy and between doctors and church people.

In our efforts in the year ahead to build a stronger and a better understanding between the profession and the public, I hope every doctor will contribute. I want also in this connection to mention in passing the action of the council to set up grievance committees at the Councilor District level to resolve misunderstandings between patient and doctor as these may occasionally and inevitably arise. These committees will require the support and cooperation of the doctors in each area.

As I said at the outset, I come to the start of my term of office in fear and trembling. I am conscious of the honor you have given me. I shall do my best to meet the responsibilities with the help I know I shall have from all of you. In conclusion, I should like you to share with me a prayer I am often these days reciting for myself:

"Lord Thou knowest better than I know myself that I am growing older, and will some day be old.

"Keep me from getting talkative, and particularly from the fatal habit of thinking I must say something on every subject on every occasion.

"Release me from craving to try to straighten out everybody's affairs.

"Make me thoughtful, but not moody; helpful, but not bossy, with my vast store of wisdom it seems

(Continued on page 540)

Report of Mrs. Ralph Bohnsack, President of the Woman's Auxiliary

Mr. Speaker, Dr. Furlow, Members of the House of Delegates, and guests: It is with mixed emotions that I stand before you today, for I am here in the place of our beloved President, Mrs. Delevan Calkins, who, as you know, was killed in a tragic accident on August 7, 1964, and it was up to me as President-Elect to carry on her year for her. I have tried to do so to the best of my ability, with much wonderful help from our able past-presidents, our officers and committee chairmen, and our county presidents, who have all so willingly given me assistance when I needed them.

We began our year using as a theme, BETTER HEALTH — BETTER WORLD, which our National President, Mrs. William H. Evans, of Youngstown, Ohio, had chosen. As you know, for some years we have used a point system whereby the county auxiliaries are graded on their year's work. A gold cup is awarded each year to the outstanding auxiliary in the state, and I am happy to say that my own Grand River Auxiliary won this last year. The winner this year will be announced at our luncheon on Tuesday. Other awards are given to the outstanding auxiliaries in different membership brackets—1-15, 16-30, 31-75, and 75 and over.

From the many reports I have had from the 29 county auxiliaries all over the state, I know that they have all worked hard toward the goal of BETTER HEALTH—BETTER WORLD. Much has been done in the way of SAFETY, from seeing that stop signs were erected, to passing out materials on Poison and First Aid to Girl Scouts and other organizations, seeing that Registered Nurses were secured to teach First Aid to baby sitting classes in the schools, stressing the use of seat belts, all kinds of farm and water safety, and especially safety on the highways this year with our safe-driver courses.

Along with this, in the area of DISASTER PREPAREDNESS, many of us have conducted classes in "Medical Self-Help," training people what to do in any emergency. I myself have had two classes recently in my own town of Brookfield. We were pleased at our Fall Conference to have Mrs. Hugh Brady from Concordia be presented with an award by Dr. H. M. Hardwicke of the Division of Health for her outstanding work in seeing that 699 people took this course.

In the field of Legislation we have all done our part to write letters to our Congressmen opposing Medicare and endorsing Eldercare, and presenting many programs to various groups in this field. One county had Mrs. Aaron Margulis, Public Relations representative for the AMA, speak before several groups and appear on TV. One auxiliary presented Dr. Edward Annis to 800 people, speaking on political legislation.

We have a committee known as IHA or International Health Activities, which has sponsored the collection of more than 1500 pounds of sample drugs, medical journals, bandages, and Johnny coats made from old white shirts, to send to World Medical Relief for the use of doctors in hospitals overseas. One auxiliary made 36 of the hospital gowns at a special meeting and also bought six dozen rubber tips for crutches to send to a hospital in Jerusalem.

Many of the Auxiliary members have organized and assisted with the Oral Polio Vaccine Clinics, with Blood Banks, have staffed TB Mobile x-ray units, have worked in heart fund and cancer drives, etc. Many scholarships and gifts have been given through our Health Career Committees. Several Future Nurses Clubs have been organized, as well as Candy Stripers.

In the MENTAL HEALTH field, several auxiliaries have assisted with camps for retarded children, have shown films and distributed literature on Mental Health to many organizations, sponsored community day programs, served as volunteers in mental hospitals, shown the film "Cry for Help" on suicide prevention, asked radio stations to use the transcription called "Mirror to the Mind," a public service presentation of the AMA.

We have contributed $4,341.21 to AMA-ERF, as of March 20, and will probably have more to report by May 1, the National deadline for reporting. Of this amount, $1,474.43 went to the Student Loan Fund; $2,839.78 to the Medical Schools. Of this amount $876 went to Missouri University Medical School, $437 to Washington University, and $254 to the St. Louis University. Four hundred and fifty-seven dollars of the total was contributed in loving memory of Bitsy Calkins. The National report in December, 1964, showed that Missouri was the leader of the six states in the 1,500-2,000 membership category in contributions.

In May, 1964, it was the pleasure of the Auxiliary, having been voted at the state convention, to turn over the Medical Student Loan Fund which had been organized in 1951, to the Missouri State Medical Foundation. This amounted to a check for $4,031.32 and outstanding loans in the amount of $8,600—a total of $12,631.32. We felt that this could be used to greater advantage by the Medical Foundation and our action followed a survey of our various county auxiliaries as to the termination of our Student Loan Fund and the disposal of the nearly $13,000 in cash and outstanding loans.

As state president, I have traveled quite a few miles in the interest of the Auxiliary. In May, I was a guest at the state convention of the Woman's Auxiliary to the Illinois State Medical Society held in Chicago. I also received invitations to the Iowa and Kentucky meetings which I was unable to attend. In June I was chairman of the delegates to the National Convention in San Francisco where one of our own members, Mrs. Richard Sutter, was elected President-Elect. In October I attended the Fall Conference Workshop of the National Auxiliary in Chicago. Our own Fall Conference was held at Tan-Tar-A Resort on the Lake of the Ozarks the last of October and we were pleased to have Dr. Furlow and Mr. Tom O'Brien bring us messages from the Missouri State Medical Association, and talk to us on Legislation. In November I attended the Convention of the Southern Auxiliary in Memphis where Mrs. Jordan Kelling of Waverly was installed as president and I presented her with a silver tray from our own Auxiliary.

I have only been able to visit six of the county auxiliaries this year because of the pressure of my duties as both president-elect and president, and illness in my own household. However, I hope to do more of this next year. The meetings that I have attended have made me proud to be the president of such a fine group of doctors' wives. These women are willing and eager to assist the Medical Association in any way possible. That is our primary purpose. If there is one thing I might hope to accomplish this next year, it would be to have the wives of every member of this Association belong to the Auxiliary and to take part in its activities. Only seven auxiliaries have 100 per cent membership now. You can help us with this project. Go home and ask your wife if she belongs to the Auxiliary, and if not, why doesn't she? She can be your best ambassador in improving the reputation of the medical profession in the eyes of the public. This is not just a woman's club, this is an Auxiliary to the Missouri State Medical Association. Let us be your ambassadors of good will in your community, your state, your nation, your world. Our membership at present in the state of Missouri is 1,867—yours is over 3,000. Where are the rest of those wonderful women? We want them and need them. Please help us to join hands—close the gap.

I am proud to report the organization of the Lincoln-St. Charles Auxiliary in November last year with 30 new members. I am also happy to announce the reorganization of the Franklin-Gasconade-Warren Auxiliary with 16 members. This is a wonderful start toward closing that gap and we hope to make that gap even smaller next year.

We are proud of our past-presidents who have continued to be active in our Auxiliary, and especially are we proud of Mrs. Richard A. Sutter who will, in June, at the National Convention, take over the reins of the Woman's Auxiliary to the American Medical Association. We hope many of you will be there to help us honor her.

Mrs. Stanley S. Peterson is at present National Regional Program Chairman. Mrs. Henry C. Bauman is the North Central Regional Disaster Preparedness Chairman. Mrs. Jordan Kelling is the National Chairman on Disaster Preparedness, in addition to being president of the Southern Auxiliary. Without their help and guidance and the wonderful assistance of Mrs. Lawrence S. Crispell, our immediate past-president, I could not have carried on this year.

I wish also to express my sincere appreciation to Dr. Leonard T. Furlow and the members of the Advisory Council—Dr. Kenneth C. Hollweg, Dr. David N. Kerr, and Dr. Byron M. Stuart, and to Mr. Tom O'Brien, Mr. Tom Fox, Mr. Ray McIntyre, Miss Helen Penn, and Mrs. Bert Thomas for their invaluable assistance in the state office. We greatly appreciate the generous financial support of the Association for our Quarterly Bulletin and the July publication of the Roster.

I have written eight articles for MISSOURI MEDICINE this year and greatly appreciated the opportunity. By the way, I find many auxiliary members never see these articles because the Journals never find their way home from the office. Maybe you can help me here.

God willing, I shall report to you again next year and shall hope to have accomplished much to aid the Missouri State Medical Association, through the medium of the Auxiliary. Please call on us for support where you feel we can assist you. God made us your help-mates—let us continue to serve you.

In closing, may I express my best wishes for a fine Convention? Thank you so much for the privilege of speaking to you, for your kindness to me, and your interest in the Auxiliary.

Furlow Remarks (cont'd.)

Before I close, I want to thank all the people who have made this year so enjoyable, especially Dr. Mont Hardwicke, director of the Missouri Division of Health, and Dean Vernon Wilson of the University of Missouri. Their advice and assistance has been gratefully received and deeply appreciated. During the past few months, Mr. Ray McIntyre has taken charge of the Association office with great skill, and he has my praise and my thanks. John Noble has been invaluable in giving interpretations and advice concerning legislative problems. The staff has worked long and hard and their efforts are greatly appreciated. I am also grateful to Lemoine Skinner, Jordan Singleton, Peggy Heilig and other members of the Skinner office for their faithful service. The affairs of the Auxiliary have been wonderfully handled in spite of the unfortunate death of Mrs. Calkins, and the cooperation of the Auxiliary is necessary and always to be counted upon. Unfortunately, I could never begin to name all of the individual Councilors, officers, and committee chairmen and members who made real contributions to the Association during the year. I don't know a finer group of men to know or to work with, and I look forward to continuing our joint efforts on behalf of the medical profession. I want to tell you again how deeply I have appreciated this opportunity to be of service, and I want to wish Paul Whitener great success in the months ahead. He will learn, as I did, that the more involved one is in the work of this Association, the more committed one becomes to see it grow stronger and stronger for the challenges that lie ahead.

Thank you very much.

Whitener Remarks (cont'd.)

a pity not to use it all . . . but Thou knowest, Lord that I want a few friends at the end.

"Keep my mind free from the recital of endless details. . . . Give me wings to get to the point.

"Seal my lips to my many aches and pains . . . they are increasing and my love of rehearsing them is becoming sweeter as the years go by. I ask for grace enough to listen to the tales of others' pains. Help me to endure them with patience.

"Teach me the glorious lesson that occasionally it is possible that I may be mistaken. Keep me reasonably sweet. I do not want to be a saint . . . some of them are so hard to live with, but a sour old man is one of the crowning works of the devil.

"Help me to extract all possible fun out of life. There are so many funny things around us and I don't want to miss any of them."

Hygroton®
brand of chlorthalidone

the long-acting diuretic

Indications: Many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Dorhout Mees, E.J., and Geyskes, G.G.: Acta med. scandinav. 175:703, 1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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Hygroton, brand of chlorthalidone, gets rid of edema efficiently. Your edematous patients will generally need far fewer tablets than with most diuretics. And they'll generally save more on prescription costs. One tablet a day is a popular dosage. So is one tablet every other day. You may even find half a tablet three times a week does the job. No other diuretic works as long. And none has as much natruretic activity per tablet.* For good riddance of edema with the least number of tablets, prescribe Hygroton, brand of chlorthalidone.

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Geigy

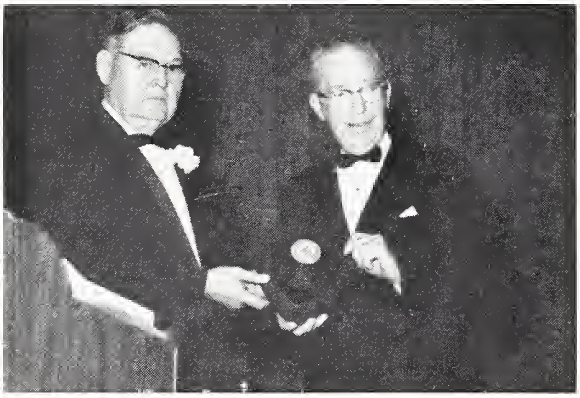
Annual Session Minutes (cont'd.)

of these recommendations, seconded by Dr. Wray. Motion passed.

Dr. McCraw reported to the Council that Dr. Durward Hall of Springfield had announced that he would become a candidate for President-elect of the AMA at the June, 1965 meeting. Dr. Peterson then read a letter received from Dr. Hall to that effect, giving his background and the offices he had held in the past, and also that he is now a member of Congress. In discussion, it was brought out that his being a member of the AMA House of Delegates he could probably get wholehearted support of AMA Delegates and of course the State Association, and that this was the time to make his move and that he had a good chance of being elected. On motion of Dr. Furlow, duly seconded, it was agreed that a committee be appointed to solicit support for Dr. Hall's candidacy on a state-wide basis and attempt to raise as much money as possible from voluntary contributions. Motion passed.

Mr. O'Brien called attention to the December, 1964 issue of MISSOURI MEDICINE which was the first issue published since Mr. Allen Smith joined our staff, as Managing Editor.

Mr. Smith then called attention to a questionnaire which will be published in the January, 1965 issue. He explained that many journals in the State Medical Journal Group would carry this questionnaire to get reactions and opinions from physicians. He urged the Councilors to remind the physicians in their respective districts to fill out the questionnaire and return it to the Association office. He stated that the purpose of the questionnaire was to improve our position and perhaps help to increase our advertising.



Incoming MSMA President, Dr. Paul R. Whitener (l.), presents an engraved plaque to retiring President, Dr. Leonard T. Furlow, honoring him for his year of service to the State Medical Association and the physicians of Missouri.

Mr. O'Brien reported that a meeting was to be held in Chicago by the AMA on December 13. It was reported that Mr. Allen Smith and Lemoine Skinner would attend. This meeting is concerning an Educational Campaign dealing with King-Anderson and Kerr-Mills legislation. Mr. O'Brien also reported that Dr. Kenneth Glover of Mt. Vernon had accepted the chairmanship of the Committee on Medicine and Religion in place of Dr. Whitener who had asked to be replaced as chairman, but would remain as a member of the committee. He also reported that Dr. Janney, Chairman of our Committee on Study of Cardiac Disease, had been asked to attend a Conference on Cardiovascular Diseases in Washington, D. C. However, Dr. Janney was unable to attend and suggested Dr. Jack Martt of Columbia, a member of the committee, attend in his place. Dr. Martt did attend the meeting. Mr. O'Brien also reported on a meeting to be held in Chicago on January 9, 10, 1965 by the AMA, a Conference on Kerr-Mills.

Mr. McIntyre reported on the Missouri State Medical Foundation as follows: As of December 11, 289 loans to 119 Missouri resident medical students had been made in the amount of $134,435.00. Assessments collected to date amounted to $24,750.00. Gifts and other donations from February 1964 to December 1964 amounted to $1,040.00. Four students repaid their loans in full, including interest, amounting to $4,406.95. Partial repayments, including interest, amounts to $589.94. Dr. Bull's letter to the entire membership soliciting funds for the Foundation resulted in donations so far to the amount of $495.00. Dr. Whitener and Dr. Furlow presented a check to the Foundation from Mr. Leroy A. Weidle, Jr., President of Knight Drug Company in the amount of $1,000.

He reported on the Woman's Auxiliary loan fund which had been turned over to the Association on May 6. That amount was $4,031.32 in cash. Since May 6 we have received repayment from one student in the amount of $401.00 and from partial repayments $431.34, which added to the above amount makes a total of $4,863.66. Woman's Auxiliary loans unpaid to this date amount to $3,776.49. Mr. McIntyre expressed his appreciation to Drs. Whitener, Muether and Doyle, members of the Committee on Loans, for their time and efforts in this worthy purpose.

Dr. Furlow expressed his thanks to the other people for their contributions and also for contributions from the residue from the polio campaigns. Dr. Furlow stated that he had attended the Grand River Medical Society meeting with Mr. McIntyre and reported that the new Secretary-elect of that society was a young man to whom the Foundation had loaned money to finish his medical training and had located in Missouri.

Mr. McIntyre reported that two medical societies, Grand River and West Central each donated $100.00 to the Foundation from their general fund recently.

Mr. O'Brien reported on our status with the local Blue Shield plan in regard to the Medicare program. He read a letter received from Colonel Hayes of ODMC and stated that the problem reported at the previous Council meeting had been straightened out. However, ODMC feels that possible consolidation of the two plans in the state, i.e., St. Louis and Kansas City, would probably result in less expense for the government. He said he would contact the Kansas City plan to see if they would consider doing this or whether it would be possible to do so. He also reported that nothing could be done about the present contract, but he would check before renewal of the next contract which would be September 30, 1965.

Mr. McIntyre reported on meetings he had attended, one in Cape Girardeau on October 5, which was a combined meeting of the Society and the Southeast Missouri Cancer Conference. This was a good meeting and re-

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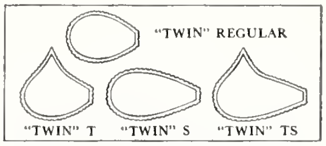

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sulted in good attendance and they probably will continue this procedure next year. Mr. McIntyre suggested that this idea might be tried in other areas over the state to cut down the number of meetings. He also reported on the public dedication of a new doctors office building in Bowling Green which he attended on October 11. This was sponsored by the Sears Roebuck Foundation and is being occupied by two new young physicians who have just located in Bowling Green. He also reported on several other buildings being built under the Sears Roebuck program, one in Monroe City for one or more doctors, a similar one in LaBelle and another under construction in Buckner, Missouri.

Mr. McIntyre also reported a meeting held at Four Seasons Lodge in the Ozarks on November 12 and 13. This was a Cancer Conference on Cancer Detection and Diagnosis sponsored by the University of Missouri Medical School for the purpose of postgraduate cancer detection and diagnosis programs. Among those attending were Drs. Whitener, Wray, Fisher, and a number of representatives from county societies over the state. He reported packets were available which included various types of cancer detection projects, local programs for county medical societies and hospital staffs. The Postgraduate Committee of the University of Missouri is sending this information to all hospitals so that the staffs may also use them to secure speakers. He reported that the West Central Medical Society held one of these programs and it was well received.

On November 15, Mr. McIntyre attended a meeting of the Infant and Child Care Committee of MSMA and said that Dr. Kinder would report on that later. He also reported on an area meeting in Sedalia on November 18, and on November 20 and 21 attended M.D. Day at the University of Missouri. Mr. McIntyre reported that Dr. McCraw, Councilor of the 8th District, was installed as President of the Missouri Academy of General Practice at their annual session held October 31-November 1.

On motion of Dr. Kerr, duly seconded, the report of the Field Secretary was accepted. Dr. Kerr also moved a vote of congratulations to Dr. McCraw as president of the MAGP. Motion passed.

Mr. O'Brien presented the resolution and background material on osteopathy as outlined by the Council and which is to be included in the Delegates Handbook. This report reviews the resolution on osteopathy adopted by the 1962 House of Delegates of MSMA and an extract of the Report and Recommendations of the Judicial Council adopted by the AMA House of Delegates of June, 1961. Since several problems have been presented to the Council during the year, this report was prepared for presentation to the House for clarification of Association policy on osteopathy. After considerable discussion, and on motion of Dr. Benoit, duly seconded, it was voted that this preamble and resolution be presented to the House of Delegates for clarification.

Dr. Ulett, Director, Division of Mental Diseases reported to the Council on (1) program on the three Intensive Treatment Centers; (2) discharge of patients; (3) Missouri Institute of Psychology; (4) budgetary needs; (5) placing Division of Mental Diseases under politics instead of professional people; and (6) proposed program for retarded children. Dr. Ulett explained all of the above items thoroughly and answered a number of questions to the satisfaction of all concerned. On motion of Dr. Benoit, duly seconded, it was

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voted that Dr. Ulett's report be accepted by the Council.

Mr. O'Brien reviewed the case of the physician in southern Missouri who was sued for malpractice and explained that according to the By-Laws, the Association may assist a physician to the extent of $300. The Committee was polled after investigation of the case, and Dr. Gist, the chairman, recommended that the Association provide the money in behalf of the physician and asked that this be referred to the Council for approval. After discussion, and on motion of Dr. Benoit, duly seconded, it was voted that the recommendation of the Committee on Defense be approved.

Mr. O'Brien reported on State and National legislation which will probably be introduced in the next session. He reported that the meeting of the Liaison Committee with the Hospital Association re: Kerr-Mills had to be postponed until after December 18. Mr. Lloyd of the Hospital Association said he would contact us later and try to work out another date, possibly after Christmas. Mr. O'Brien also reported on the Hospital Advisory Council in regard to Hill-Burton allocations. He explained that the present law calls for a committee of seven persons composed of three physicians, one osteopath, one manager of a TV Station in Springfield, one hospital administrator from Jefferson City and one representative from Cape Girardeau in the insurance business.

He then referred to two other acts included in the material contained in the Council folders, one of which pertains to Mental Health and the other relating to Health and Welfare. The one act pertaining to the Mental Health Commission is apparently to be sponsored by the Missouri State Mental Health Association. This act increases the size of the Commission from five to seven members. The second one relates to Dr. Hardwicke's Division of Public Health and the Mental Health Division. This act is also expected to be sponsored by the Missouri State Mental Health Association. After discussion of the two above mentioned bills, on motion of Dr. Kerr, duly seconded, it was agreed that both these bills should be opposed.

Dr. Furlow reported on a few major items adopted by the AMA at Miami. He mentioned that the AMA did not alter or modify its original statement on Medicare stating that the position taken was the right one, so they reaffirmed their position as being opposed to medical care for the aged under social security and reaffirmed the statement that the best provision for health care for the aged was under Kerr-Mills and urged that every state which had not done so, should implement the Kerr-Mills act. He also mentioned that all expressed sympathy over the death of Dr. Welch and said that Dr. Ward is doing a good job. Dr. Appel of Pennsylvania was elected President-elect and will take office at the meeting in New York in June. Dr. Joseph B. Copeland was elected to fill the unexpired term of Dr. Appel on the Board of Trustees.

The President of the Woman's Auxiliary made the usual very good speech to the House of Delegates. One recommendation was made to the House, due to the fact that there were more members of the AMA than Auxiliary members, that joint membership be devised, that is, if husband is a member of the local society that the wife should be a member of the Auxiliary. She also recommended encouraging local societies to encourage

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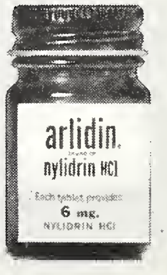

joint membership and expressed appreciation for the Auxiliary work.

Dr. Furlow also reported that the AMA was trying to do everything possible to try to increase the number of family physicians. Dr. Furlow reported that the 1967 Clinical Session will be held in Houston; and that possibly the 1969 Clinical Session will be held in St. Louis. He also stated that he and the delegates had visited many hospitality rooms and talked to various people regarding Dr. Durward Hall's candidacy.

Dr. Whitener mentioned that the proposed teletype communication set-up between AMA and state medical societies was approved on a limited basis; that the AMA would assume the cost of putting in these sets. Dr. Furlow also mentioned that in spite of pleas for an increase in dues to help initiate the teletype communication system, no dues increase was voted at this time.

Dr. Hardwicke reported that he would apparently be leaving the Division of Health in January, but that he would like to ask that the physicians request their legislators to see that an adequate amount is included in the budget for the Health Division. Dr. Furlow expressed regret at the news of Dr. Hardwicke's leaving and stated that he doubted there was anything the Council could do regarding the newly elected Governor's decision. He expressed appreciation for the fine work Dr. Hardwicke had done and stated that he was one of the few public health officers in the country who has done so much for the medical profession.

Mr. O'Brien reviewed the two meetings held by the Special Committee, the first in July and the second on November 22. He explained that several of the officers were present at these meetings and they had presented the various problems the Committee should consider. He stated that in the discussion that followed, it was agreed the committee should complete the study, draft a report and submit to the Budget Committee and the Council in December so that it could be included in the Delegates Handbook for the Annual Session. He stated that we planned to send all of this material to all of the county societies with the request that it be considered by them and that they instruct their delegates. After discussion, and on motion of Dr. Benoit, duly seconded, it was agreed that this report be approved and implemented.

On motion of Dr. Benoit, duly seconded, it was agreed that the Council submit a resolution to the House of Delegates at the 1965 Annual Session indicating that they feel the status quo should be maintained.

Dr. Wheeler, chairman of the Committee on Laboratory Medicine, gave the following report of the meeting held on Saturday evening, December 12:

(See official report in Committee Section)

On motion of Dr. Benoit, properly seconded, it was agreed that the Committee's bill to create a State Board of Medicolegal Examiners should be submitted to the legislature as previously approved by the Council.

Dr. Wheeler explained the need for legislation regarding blood banks. On motion of Dr. Benoit, properly seconded, it was agreed to introduce legislation similar to Section 1623 of the California Health and Safety Code. Dr. Wheeler then requested permission of the State Office to use our mailing system to send a letter to the full membership, the cost of the mailing to be borne by the Missouri Society of Pathologists. On motion of Dr. Furlow, duly seconded, this was approved.

Dr. Kinder, Chairman of the Committee on Infant and Child Care, reviewed the minutes of the meeting held in Jefferson City on November 15.

(See official report in Committee Section)

On motion of Dr. Benoit, duly seconded, the report of the Committee on Infant and Child Care was accepted as amended.

Dr. Brookes presented the report of the Committee on Mental Health for Dr. Forman the chairman who could not be present. The Committee met in Jefferson City on December 6. Discussion followed regarding state certification of psychologists and possible legislation to be introduced for certification or licensure of psychologists. It was explained that this was contrary to the Missouri Medical Practice Act. On motion of Dr. Kerr, duly seconded, it was agreed that a letter be sent to the Missouri Psychological Association by the Committee on Mental Health stating they are opposed to the proposed bill including their reasons and suggest that they confer together and work out a solution. On motion of Dr. Furlow, duly seconded, the report was accepted as amended.

Dr. Matthews, Chairman of the Program Committee, reviewed the program for the 1965 Annual Session to date, stating that it was pretty well set.

Mr. Mothershead announced that the St. Louis County Woman's Auxiliary was planning a social function for Sunday evening in the Chase Club. Mrs. Schattyn is the program director and tickets will be sold on a first come first served basis and capacity is limited to 500.

Dr. Furlow announced that Dr. Vernon E. Wilson, Dean of the University of Missouri School of Medicine would be the principal speaker at the Annual Banquet, his subject being, "Practice, Learning and Progress."

Dr. Stuart brought up the subject of the assessment for MSMF stating that 1965 was the last year for this assessment and if it was to be continued the Council would have to recommend it at this time so that it can be presented to the 1965 House of Delegates. After discussion, on motion of Dr. Whitener, duly seconded, it was agreed that the Council recommend that the assessment be continued for another three years.

Dr. Furlow stated that Dr. Fisher had discussed with him the possibility of having Grievance Committees in various Councilor Districts to take care of grievances that come up in the smaller county societies where there are only a few physicians and where they would have to pass judgment on one of their own people. He presented the following proposal to amend the By-Laws:

"CHAPTER VI—Council. AMEND Chapter VI, Section 4, By-Laws of Missouri State Medical Association by striking all of Section 4 and inserting in lieu thereof the following:

"Section 4: The District Councilor, together with two (2) members of component societies within the Councilor District, selected by the Councilor, shall serve as a Board to hear, and by a majority vote, adjudicate any questions involving the right and standing of members, either in relation to other members or to component societies or to the Association, and all matters of discipline affecting the conduct of members of component societies; or other matters.

"The Council shall be the Appellate Board of Censors of the Association. It shall hear and adjudicate all matters on appeal from the decision of the Councilor Board; it shall hear and adjudicate matters of an ethical nature

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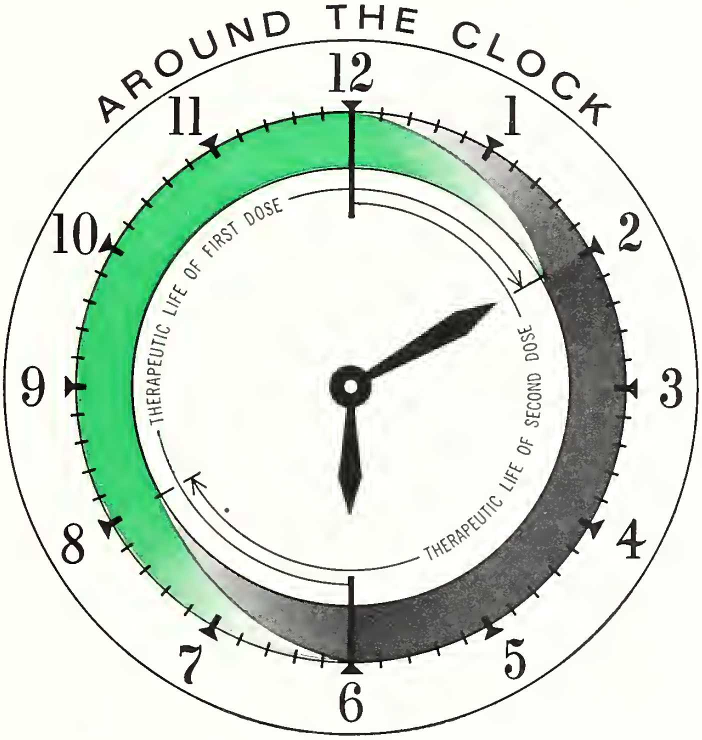
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A portion of the honored guests table at the Annual Presidents' Banquet. (l. to r.) Mrs. William H. Evans, President of the Woman's Auxiliary to the AMA, Dr. and Mrs. Edgar W. Davis, Dr. and Mrs. James C. Sisk.

brought before the House of Delegates or the General Meeting, which shall be referred to the Council without discussion. On original decision or appellate determination, its decision shall be final, unless appealed to the then convened meeting, or to the next meeting of the House of Delegates."

On motion of Dr. Whitener, duly seconded, it was agreed that this should be presented to the House of Delegates for action and a change in the by-laws.

Dr. Furlow then reported to the Council the retirement of Miss Helen Penn and recommended that she be invited to a special luncheon at the next Council meeting and presented with some token of appreciation for her many years of service to the Association. On motion of Dr. Furlow, duly seconded, it was decided that the Executive Staff, Tom O'Brien as chairman, should decide what procedure should be followed in showing tribute to Miss Penn.

Dr. Furlow recommended that Dr. William Perry be placed on the AMA Committee on Osteopathy. On motion of Dr. Furlow, duly seconded, it was agreed to endorse Dr. Perry for membership on the AMA Committee on Osteopathy.

Dr. Stuart appointed the following to serve as members of the Liaison Committee on Osteopathy: Drs. Furlow, Chairman; Benoit, Stanley Peterson, English and Stuart, ex-officio.

Mr. O'Brien requested that a committee of three be appointed to assist him and Allen Smith with deliberations on legislation in the coming session of the legislature. On motion of Dr. Whitener, duly seconded, the following were appointed to serve in this capacity: Drs. Matthews, Stuart and Furlow.

Dr. Benoit reported on a meeting to be held in Kansas City on December 17 of the Council of Jackson County and delegates, to discuss matters of interest that will come up at the annual session. He also reported that Dr. Victor Buhler indicated that as the result of actions taken by the AMA, Dr. Coleman, chairman of the AMA Legislative Committee will replace Dr. Appel on the Board of Trustees, Dr. Buhler asked for endorsement of the Council for appointment to the AMA Legislative Committee. On motion of Dr. Furlow, duly seconded, it was recommended that a letter be written to Dr. Ward in behalf of Dr. Buhler's appointment on the Legislative Committee.

Dr. Peterson announced that he would appreciate all the help he can get in his job as Speaker of the House this year in order that everything will run smoothly.

Dr. English reported on several meetings held in his district all of which were well attended. He reported that all of the money received from their polio campaign was donated to the Dunklin County Hospital to purchase equipment that was badly needed. He also reported as to the Jefferson City office, stating that in his district the majority of the doctors do not see the benefit of the office being in Jefferson City if they have to pay extra dues each year.

The dates for the next Council meeting will be February 13 and 14, 1965. A one day meeting will be held if possible.

Meeting of February 13 and 14, 1965

Byron M. Stuart, M.D., Boonville, Chairman, called the meeting to order. Those present were: Drs. Stuart; Lysle M. Bach, Hannibal; David N. Kerr, St. Louis; Paul H. Rother, St. Charles; Rolla B. Wray, Nevada; Hector W. Benoit, Jr., Kansas City; Doyle C. McCraw, Bolivar; E. A. Stricker, St. James; W. D. English, Cardwell; Leonard T. Furlow, St. Louis; Paul R. Whitener, St. Louis County; John I. Matthews, Jefferson City; Charles R. Doyle, St. Louis; Stanley S. Peterson, Springfield; A. W. Neilson, St. Louis; H. M. Hardwicke, Jefferson City; William D. Mayer, Columbia; Douglas A. Ries, St. Louis; B. J. Bass, Salem; Messrs. John W. Noble, Kennett; Gary Schnedler, Springfield; Hollister S. Smith, St. Louis; Edgar Mothershead, St. Louis County; Lemoine Skinner, Jr., Jordan Singleton, Ray McIntyre, Tom P. Fox, Allen Smith and Miss Peggy Heilig, St. Louis.

Dr. Ries presented the Report of the Committee on Industrial Health.

(See official report in Committee Section.)

After discussion regarding dual court action, on motion of Dr. Furlow, duly seconded, it was recommended that the Committee meet with the legal counsel of the Association and representatives of industry and insurance carriers to see how they could proceed with this problem.

Dr. Neilson reported on the AMA Special Session held in Chicago on February 6 and 7, copies of which were distributed at the meeting. He reviewed the report and suggested that this report be sent to each member of the Association with a covering letter, along with a reprint from the *Reader's Digest* by Walter H. Judd, M.D., and two other pamphlets to be supplied by the AMA regarding the AMA's Eldercare program and urging the support of every physician member of the Association in seeking public support. In accordance with the thinking of the AMA House of Delegates, the Eldercare campaign program should include a person to person basis as well as organizational program efforts.

On motion of Dr. Kerr, duly seconded, it was recommended that a revised version of this report be sent to all members of the Association with the attached material.

Dr. Neilson reported that Dr. Durward G. Hall of Springfield, will definitely be a candidate for President-elect of the AMA at the June, 1965 meeting in New York. He reported that this was discussed at a caucus of the Missouri Delegation during the recent special meeting of the AMA House of Delegates in Chicago. Tentative plans for handling this campaign were discussed, stating that a letter should be sent to all AMA Delegates, Alternates, Officers, Board of Trustees, and all other State Associations on MSMA official letterhead, and that a separate letter would be sent out from Greene County to the same people in behalf of Dr. Hall. Other plans were to hold some sort of reception during the AMA Session in June at the Americana Hotel in New York.

Dr. Furlow mentioned that since only the delegates to the AMA could elect a president, consideration should first be given to the letter to be sent to them and the other details could be worked out later. On motion of Dr. Benoit, duly seconded, it was agreed that the letter, sample of which was presented to the Council, should be sent as directed.

Mr. McIntyre gave a preliminary report on some of the expenses which might be incurred in a campaign for Dr. Hall. Information in hand was that a special reception for all the Delegates and Alternates and their wives and others who might attend could cost in the neighborhood of from $3000 to $4000, depending upon the number of guests. Dr. Furlow stated that there were too many details for the Council to decide upon, and moved that the Council go on record as approving this campaign for Dr. Hall and assigning the task of looking into the expenses involved to the four AMA Delegates plus Dr. Peterson of Springfield for report back to the Council. The Council would then suggest to the House of Delegates an expenditure for this project. Motion was duly seconded and passed.

Dr. Furlow reported to the Council regarding Mr. O'Brien's sudden illness while in Chicago and stated that he would like to have the Council's approval of the actions he took upon his return to St. Louis. He stated that he visited the State office and spoke to all the staff telling them that for the time being Mr. Ray McIntyre would be in charge of the office and act for the executive secretary, that Allen Smith would take over the duties regarding legislation with the help of Tom Fox. He also asked the Council to approve a change of signature on the Secretary's Account carried at Mercantile-Commerce National Bank, explaining that his account is used to pay small bills. He explained that this would be only a temporary arrangement until Mr. O'Brien gets back to the office, but that it needs Council approval.

On motion of Dr. Whitener, duly seconded, it was agreed that the Council go on record as approving these actions and name Ray McIntyre as Acting Executive Secretary. Motion carried.

On motion of Dr. Whitener, duly seconded, it was agreed that Ray McIntyre be authorized to write checks on the Secretary's account. Motion carried.

Mr. McIntyre reported in the absence of Mr. O'Brien. He called attention to a letter which had been sent to Dr. Blasingame on January 18, at the suggestion of the Council at its last meeting, suggesting that Dr. William D. Perry be placed on the AMA Committee on Osteopathy and that Dr. Victor B. Buhler be appointed as a member of the AMA Committee on Legislation. He reported that a thank you reply from Dr. Blasingame stated that these nominations would be brought to the attention of the Board of Trustees when it considers appointments to these committees.

He also reported on a letter received from the North America Insurance Company relative to the MSMA group accident insurance policy now in effect, stating that after April 1, it will not be able to continue coverage for anyone after they attain the age of 70. At present there are approximately 40 members and employees and 10 dependent wives, who are over age 70. An effort was made to find other coverage, but to date nothing satisfactory has been found.

Allen Smith reported on TWX, the AMA teletype service offered to state medical associations. He explained that it would provide more rapid and economical communication. The cost of installation, he explained, would be borne by the AMA and the only cost to the Association would be for messages sent from this office. After discussion and on motion of Dr. Whitener, duly seconded, it was agreed that the Executive Secretary write to the AMA and request that the teletype machine be installed in the state office.

Mr. Smith also reported that the Council minutes had not been published in detail in the last few issues of Missouri Medicine, but that a notice had been published that the official minutes were on file in the Association office. He then suggested that we go a step further and send the Council minutes to each component society. After discussion, and on motion of Dr. Kerr, duly seconded, it was agreed to accept the recommendation of Mr. Smith that copies of the Council minutes be sent to each component society and the minutes continue to be briefed in Missouri Medicine.

Mr. McIntyre then reported on two items pertaining to the Woman's Auxiliary in regard to financial assistance. It was decided that these items would be taken up later along with other budgetary needs.

Mr. McIntyre reported that Dr. Hollweg had received a letter from Mr. Joel C. Kimball, Director of the People-to-People International Travel program. This represents an invitation to Dr. Hollweg to accept delegation leadership on a medical mission to several South American countries. This letter was presented to the Council for informational purposes only and Dr. Hollweg requested the Council's approval, explaining that no work would be involved on the Association's part, merely his own, and perhaps a little publicity in Missouri Medicine from time to time. After discussion and on motion of Dr. Benoit, it was agreed that the State Association endorse the plans for this delegation, headed by Dr. Hollweg, to be formed as part of the People-to-People program.

Dr. Matthews and Allen Smith reported on the legislative situation in Jefferson City at this time, especially in regard to those bills which pertain to the medical profession and health care. Dr. Matthews stated that this was going to be a very difficult session this year for the medical profession and doubly so since Tom O'Brien would not be available. He stated that even if Tom were here, he believes good results are doubtful in some instances since the situation looks quite disadvantageous for medicine.

A portion of the honored guests table at the Annual Presidents' Banquet. (foreground, l. to r.) Mrs. and Dr. Richard A. Sutter, Mrs. and Dr. Ralph W. Bohnsack, Mrs. William H. Evans, President of the Woman's Auxiliary to the AMA.

Dr. Hardwicke reported on that bill that has not been introduced as yet. This relates to repealing Section 200, regarding the Cancer Hospital. He explained just what this would mean to the Cancer Hospital and asked the Council for advice on this particular item. Mr. Noble offered to go over the bill with Dr. Hardwicke and give him an opinion on it.

Dr. Doyle reported that the books of the Association have been audited as of 12/31/64 and after payment of outstanding liabilities show an unencumbered balance of $10,627.00. The excess of Income over Expenses for the year 1964 was $2,308 and this is included in the balance of $10,627. He reported that the 1964 financial statement will be published in the March 1965 issue of MISSOURI MEDICINE and will also appear in the Delegate's Handbook. The budget for 1965, approved at the December 1964 Council meeting, will also be in the Delegate's Handbook in the combined reports of the Committee and Council. On motion of Dr. Benoit, duly seconded, the report of the Treasurer was approved.

Since several items have come to the attention of the Council which were not included in the Budget for 1965, namely, expenses for Dr. Hall's campaign fund, request from the Woman's Auxiliary for a reception for Mrs. Sutter who will be installed as President of the Woman's Auxiliary of the AMA at the June meeting, and another request from St. Louis County Auxiliary for additional funds, up to $200, to help finance the Sunday evening program of the Auxiliary, considerable discussion followed regarding these items. There was also a suggestion brought up regarding the expenses of the Alternate Delegates to the AMA. Dr. Doyle mentioned that he was in favor of paying the expenses of the Alternate Delegates to the AMA, for 1965, but not their wives.

On motion of Dr. Benoit, duly seconded, it was agreed that the Association underwrite the cost of sending the Alternate Delegates to the Annual Session of the AMA in New York in 1965, and that because of the fact that Dr. Durward Hall is a candidate for president-elect of the AMA, the Council recommends that a special request for additional funds relative to Dr. Hall's campaign be submitted as a supplementary report of the Council for approval of the House of Delegates at the Annual Session.

The request of the St. Louis County Woman's Auxiliary for additional funds, up to $200, to help finance the entertainment for the April 4 Sunday evening program was discussed. On motion of Dr. McCraw, duly seconded, it was agreed to grant the Woman's Auxiliary this request.

Mr. McIntyre gave a résumé of the report of the Missouri State Medical Foundation which will be included in the Delegate's Handbook showing the financial condition of the Foundation. He also mentioned that the $7.50 assessment will run out at the end of 1965. At Council direction a resolution had been prepared recommending to the House of Delegates of MSMA that the Missouri State Medical Foundation assessment be continued for the years 1966, '67 and '68. In this respect he presented a report to the Council on MSMF Preface and Resolution to be included in the Delegate's Handbook, along with the financial report mentioned above. After discussion, and on motion of Dr. Furlow, duly seconded, the Council approved the adoption of the MSMF Preface and Resolution for inclusion in the Delegate's Handbook.

Dr. Furlow turned over to Dr. Doyle a check for $7,500 to the Foundation from the City-County Medical Charities, Inc., representing a part of the surplus income from the area oral polio inoculation program.

Mr. McIntyre reported that a request had been received from Mrs. Bohnsack, President of the Woman's Auxiliary, stating that in view of the fact that Mrs. Sutter will be installed as President of the Woman's Auxiliary of the AMA, the Auxiliary would like to have a special reception in her honor at the June, 1965 session in New York. After considerable discussion, it was decided that a committee be appointed to work with Mrs. Bohnsack relative to this matter. On motion of Dr. Furlow, duly seconded, it was agreed that a committee of two, composed of Ray McIntyre and Dr. Doyle, would consult with Mrs. Bohnsack. It was also agreed, and on motion of Dr. Benoit, duly seconded, that the House of Delegates be informed in a supplemental report of the Council, relative to an expenditure of money, when the facts are available, to support a social function on behalf of the incoming president of the AMA Woman's Auxiliary, Mrs. Richard Sutter.

Dr. English presented a report on the Dunklin County Mental Health Center. He also reported that they now have employed a psychiatrist who will be making regular visits to the center for regular consultation and psychiatric direction at the center. This report was presented to the Council for information and no action was taken.

Dr. Matthews reviewed the program of the 1965 Annual Session to date, stating that it was to be an excellent program and hoped that we would have a very good attendance. Advance program folders were given to all present. He also reported that for the first time in several years we will have a number of scientific exhibits in addition to the technical exhibits. All exhibits will be in the Exhibit Hall downstairs in the Chase Hotel. He reported that up to this time we have 10 scientific exhibits, with the possibility of several more to come, and 55 technical exhibits.

Mr. McIntyre reported on material to be included in the Delegate's Handbook. He stated that material on the study of the Jefferson City office would be included, and according to instructions, a resolution from the Council was to be submitted to the House of Delegates. The following resolution was presented:

> WHEREAS, The Council has received the report and opinion of the 1964-65 special committee appointed to study the question of establishing an Association office in Jefferson City, and
>
> WHEREAS, Most members of the Council have had this matter under continuous study for the past several years and have thoroughly examined all aspects of the question, therefore, be it
>
> *Resolved*, That the Council by majority vote hereby recommends to the House of Delegates that the status quo as pertains to the location of the Association office be maintained.

On motion of Dr. Benoit, duly seconded, it was agreed that this Council resolution be included in the Handbook.

Mr. McIntyre reported that the Report on Osteopathy which was approved by the Council at its meeting in December will also be included in the Handbook.

The report of the Special Committee to Study Delegate Representation will be in the Handbook.

Also included will be a report on Adjudication Boards, with a brief preface and reference to the report of the Constitution and By-Laws Committee. Also included will be resolutions from local societies which are received in time. One from St. Louis County has been received.

It was also suggested that the Council prepare a resolution to reaffirm its opposition to the King-Anderson bill and for its approval and full support of the Herlong-Curtis bill. The resolution is as follows:

> WHEREAS, The Congress of the United States is again considering the King-Anderson proposal for compulsory hospital care to all persons aged 65 and over, with financing through the Federal Social Security System, and
>
> WHEREAS, The King-Anderson program would cover only hospital and some nursing home care, but would, at the same

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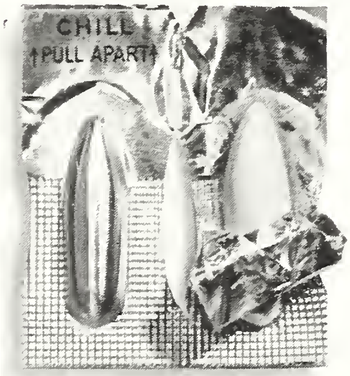

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time, place higher payroll taxes on all wage-earners to pay benefits for everyone over 65, and

Whereas, The Congress is also considering another proposal which would provide health care benefits for the elderly, the Herlong-Curtis bill, and

Whereas, The Herlong-Curtis plan would provide a wider range of benefits then King-Anderson to those elderly persons who cannot afford to pay for needed care, but would not apply to persons able to finance their own care, and

Whereas, The Herlong-Curtis bill would utilize Blue Cross, Blue Shield and other private health insurance companies as intermediary agents to provide the policies protecting the elderly from the costs of illness, and

Whereas, Maximum responsibility and authority for the administration of the Herlong-Curtis program would rest with state governments, and the program would not encroach upon the private practice of medicine in our nation, therefore, be it

Resolved, That the House of Delegates of the Missouri State Medical Association hereby reaffirms the opposition of the physicians of Missouri to the compulsory King-Anderson program of health care for the aged, and, at the same time, gives its approval and strong support to the Herlong-Curtis bill, and be it further

Resolved, That copies of this resolution be forwarded to members of Congress from the State of Missouri.

On motion of Dr. Benoit, duly seconded, it was agreed that the resolution on King-Anderson and the Herlong-Curtis bill be approved by the Council for placing in the Delegate's Handbook.

S.B. 138 dealing with full implementation of the Kerr-Mills bill for medical assistance for the aged covering the near-needy age 65 and over was discussed, and it was the consensus of opinion of the Council that a resolution be submitted from the Council urging full implementation of this bill. On motion of Dr. Benoit, duly seconded, it was agreed that the Council prepare a resolution to be included in the Delegate's Handbook indicating the wholehearted endorsement of the House of Delegates in support of S.B. 138. This was done and received Council approval.

Mr. Mothershead presented a plan proposed by National Charters for a European tour for members of the Association and their immediate families which would include England, Ireland and Scotland, Paris and Amsterdam, the tour to begin June 24 from New York and return July 9 to New York. Mr. Mothershead explained that this was a reputable agency and asked the Council's approval for contacting the membership regarding this. He also mentioned that they would place advertisements in some local bulletins as well as Missouri Medicine. Dr. Stuart stated that since the Council is aware of this proposal and since there seems to be no objection to the membership being contacted by the agency in regards to this tour, it was agreed that this be done.

Mr. McIntyre presented a letter received from the Missouri State Medical Secretaries and Assistants Society requesting three names of physicians, one of which will be selected to serve as an Advisor to the Society. After discussion, the following were selected: Drs. R. O. Muether, St. Louis; Gerald Miller, Kansas City and Harold Ridings, Cape Girardeau. On motion of Dr. Doyle, duly seconded, it was agreed that these three names be submitted to the Missouri State Medical Secretaries and Assistants Society, as per their request.

Dr. Mayer, Associate Dean of the University of Missouri School of Medicine, gave a brief report on activities of the Medical School at Columbia. He especially thanked the Council for their assistance and financial help to the medical students through the Foundation.

Dr. Bass presented the report of the Committee on Rural Medical Service.

(See official report in Committee Section.)

After considerable discussion of the various subjects contained in the report, on motion of Dr. Benoit, duly seconded, the report of the Committee was accepted.

Dr. Hardwicke reported on the mental health programs in Missouri and stated that Drs. Rae Froelich and B. J. Bass were doing a good job on the sub-committee. He reported that guide-lines had been worked out for personnel and staffing of the regional centers and admission and discharge policies have been established.

He reported on a bill to be introduced in the legislature regarding admission of patients to Ellis Fischel State Cancer Hospital, stating there were four procedures set up for patients to be admitted, as follows: (1) Residents of Missouri unable to pay; (2) Residents of Missouri who can afford to pay only part; (3) Residents of Missouri who are able to pay all; (4) Residents of other states who are able to pay.

After discussion, on motion of Dr. Doyle, duly seconded, it was agreed that the Council go on record of disapproving provisions 3 and 4 which refer to those who are able to pay and those who are out of state.

Dr. Bach reported on a program of the Marion-Ralls-Shelby County Medical Society to interest local high school students in the field of medicine.

Dr. Kerr reported that the St. Louis Medical Society was considering the formation of an over-all insurance review committee. He also reported that the Council of the St. Louis Medical Society had approved a new "Usual, Customary and Reasonable Fee" program for the St. Louis Blue Shield which had been developed by a special committee of the Society on cooperation with the Plan over the last two and one-half years. No further vote by the society will be necessary, he said, since the development of a plan of this kind was overwhelmingly approved by society members in 1962.

Dr. Rother reported that the St. Louis County Medical Society had distributed ten thousand Eldercare pamphlets and that the Lincoln-St. Charles County Medical Society recently elected their delegates to serve a two-year term instead of one year as in the past.

Dr. Stuart reported that the Boone County Medical Society, through their polio program contributed $2,000 to the MSMF. Also, that Cooper County Medical Society had a meeting to outline an action program regarding King-Anderson and the Eldercare program. He stated that the Auxiliary had been asked to work on petitions, getting speakers for service clubs, pamphlets had been ordered from the AMA, and since the local papers in that area were favorable to medicine, they were considering placing ads in the papers.

Dr. Wray reported on the 6th Councilor District meeting which was to be held on February 17 in Sedalia with Dr. Furlow as the featured speaker.

Dr. Benoit reported on the Athletic Conference held in Kansas City at which 110 coaches and trainers were present. Also that Jackson County is now preparing to go ahead with their polio campaign and that they may also be able to send a check to the Foundation later.

Dr. McCraw reported that the Dallas-Hickory-Polk Society helped install the Officers of the Greene County Medical Society on February 3, and enjoyed the outstanding program put on by the Greene County Boys.

Dr. Stricker reported on a meeting of the Mid-Missouri Medical Society held in Lebanon last month.

Dr. English reported on a number of county society meetings in his District and particularly on a meeting held in Kennett with a speaker from the University of Missouri in January.

Dr. Matthews spoke to the Council regarding the situation on legislation in Jefferson City. He stated that in view of Mr. O'Brien's illness, and also the fact that Mr. Smith was fairly new in this work, he suggested

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that additional assistance be secured for this work, at least for the next three or four months. He also suggested that the legislative committee should be strengthened with additional people added to the committee. He stated that some bills need very careful study and suggested that we approach the Councilors and presidents of medical societies to talk personally to same of the legislators for their help. He also suggested that local sponsored special meetings might be arranged to meet these people personally. He recommended that a real effort should be made to contact the legislators by members of the committee and others outside of committee hearings, especially when they are in their home areas.

Dr. Furlow stated that the Council has no provision for an Executive Committee to conduct business in its name, but suggested that a Committee of the Council, perhaps the President, President-elect, Chairman of the Council, Secretary, Treasurer, be formulated as an executive committee to assist Allen Smith, to work with the legislative committee, to pursue this matter in regards to legislation, to act for the Council to get extra help where needed. Such a motion was made, seconded and passed.

Dr. Stuart stated that the next Council meeting would be held on Sunday, April 5, during the Annual Session.

(The bulk of the Council report was referred to the Committee on Reports of Officers. Those sections dealing with the proposal for a Jefferson City office, delegate representation and the Missouri State Medical Foundation were referred to the Committee on Amendments to the Constitution and By-Laws.)

The Chairman of the Council, Dr. Byron M. Stuart, filed a supplementary report on the Council meeting which was held Sunday morning, April 4, 1965. All members were present except Drs. Bach and Matthews.

Unanimous approval was given to the following statement:

"The recent retirement of Helen Penn completes a career of staff service to the profession unmatched in the History of the Missouri State Medical Association. From 1930 to 1965 . . . history-making years of depression, war and profound scientific and social change . . . Helen Penn served the doctors of Missouri with skill, energy, dedication and, above all, warm affection.

As administrative assistant and assistant editor, she contributed the combined competence of a trained bacteriologist and a talented journalist to the resources of the Association office.

More important even than her discharge of the duties specifically assigned to her, was her commitment over the years to the whole program of MSMA and her unstinting willingness to help with every task that needed doing and with every problem that needed solving. Presidents, editors, councilors and committee chairmen came and went. To all of them, Helen fully gave her service, her experience, her skill and her support.

At this, the first Annual Session following the retirement of Helen Penn, the Council calls on the House of Delegates formally to adopt this statement of thanks and appreciation, and further to extend to our beloved associate the heartfelt wish of all of us that her retirement years may be years of happiness and interest. There can be no doubt that her career in the service of MISSOURI MEDICINE was one of high achievement. She will occupy always a special place of honor in the esteem and affection of the profession she served so long and served so well."

Doctor Furlow also proposed that a typewriter, suitable to Miss Penn's desires, be presented to her as a gift of appreciation.

(With unanimous consent, the rules were suspended and the House gave unanimous approval to the Council recommendation.)

Doctor Stuart continued with a brief résumé of the Treasurer's report, and outlined a problem involving ophthalmological technicians which had been referred to the Council. The legality of technicians fitting contact lenses has been questioned by the State Board of Optometry. The Council referred this matter to the Committee on Eye Health.

(This portion of the Council report was referred to the Reference Committee on Resolutions.)

Doctor Stuart concluded by informing the House that the Council desired to change its resolution on Senate Bill 138 by deleting the second paragraph.

(The Speaker referred that matter to the Committee on Reports of Officers.)

Doctor Furlow announced that Dr. Avery Rowlette had been selected to serve as chairman of the Nominating Committee. Other members: Drs. Richard V. Riddell, Walter Gunn, Edward Damron, James C. Cope, Donald Geisler, Fred McCoy, F. L. Wommack, C. W. Cooper and Alden P. Sargent.

The Speaker invited introduction of new business.

Dr. William H. Snead, Jr., introduced a resolution from Greene County Medical Society:

WHEREAS, Durward G. Hall, M.D., has been drafted by the Missouri Delegates to the American Medical Association to become a candidate for President-Elect of the AMA; and

WHEREAS, We feel that he is eminently qualified for this position through his service to the training in the Greene County Medical Society, the Missouri State Medical Association and the American Medical Association, where he has been representing the physicians of Missouri in the AMA House of Delegates since 1951; and

WHEREAS, As a physician, who has a world of background in organized medicine as well as public service experience as a law maker, Doctor Hall is fitted as no other man in the House of Delegates for the office of President-Elect; and

WHEREAS, His factual, pointed and brilliant oratorical abilities, as well as his forthright approach and his unusual ability to provide leadership make him an unequaled candidate for the highest office in organized medicine; and

WHEREAS, His election would reflect glory on the Missouri State Medical Association; therefore be it

Resolved, That the Missouri State Medical Association unanimously and aggressively support Durward G. Hall, M.D., as the next President-Elect of the American Medical Association.

After three seconding speeches, a motion was made that the Secretary cast a unanimous ballot in favor of the resolution. The motion was carried without opposition, and with standing applause Doctor Hall was invited to address the House. He thanked the Delegates for their action and then reviewed the status of H.R. 6675. He concluded by urging that the State Association contact members of the House of Representatives and ask them to recommit H.R. 6675 and substitute for that measure, H.R. 7057.

Doctor Stuart offered a telegram which had been prepared by the Council:

"The Missouri State Medical Association, the senior such organization west of the Mississippi, in its 107th Annual Session today took unanimous action favoring recommital of H.R. 6675 with instructions to substitute H.R. 7057 in the interest of adequate health care for all, avoiding compulsory increases in a regressive payroll tax and favoring state implementation. This substitute is adequate, less costly and can best be implemented on the existing framework of the Kerr-Mills law and health pre-insuraunce plans.

Respectfully, (signed) Leonard T. Furlow, M.D., President; Paul R. Whitener, M.D., President-Elect."

Upon suspension of the rules, the House approved the telegram and ordered that it be sent to members of the Missouri Congressional delegation.

Doctor Stuart reported another Council recommendation that $7,500.00 be allocated for support of Doctor Hall's candidacy and entertainment for Mrs. Betty Sutter, incoming President of the Woman's Auxiliary of the AMA. He also reported a Council recommendation that a list of current AMA Delegates be made available to members of the MSMA Council and the House of Delegates. These matters were referred to the Committee on Reports of Officers.

Doctor Rowlette offered the following proposal to amend the By-laws in accordance with a recommendation of the Committee on Delegate Representation:

AMENDMENT TO SECTION 2, CHAPTER III, BY-LAWS

Amend Section 2, Chapter III, By-Laws, Missouri State Medical Association by inserting at Line 5 thereof, after the word "year" and immediately preceding the semi-colon, the following:

", plus one additional delegate or alternate for each one hundred members or a major fraction thereof" so that said section as amended will read as follows:

Section 2. Each component county society shall be entitled to send each year, one delegate or one alternate to the House of Delegates for each fifty full paid members or fraction thereof in the Association on December 31 of the previous year, plus one additional delegate or alternate for each one hundred members or a major fraction thereof; provided, however, that each component society which is composed of two or more county societies shall be entitled to at least one delegate or one alternate from each of the counties of which it is composed; however, such delegates or alternates must reside in the county they represent.

(Referred to the Committee on Constitution and By-Laws.)

Dr. Joseph A. Zimmerman submitted the following resolution from the Dunklin County Medical Society:

Whereas, There are now in existence adequate private facilities for exfoliative cytology screening by members of the medical profession, and

Whereas, The members of the Missouri Society of Pathologists are willing and able to provide laboratory services without charge to indigent patients and at a reduced charge to near-indigent patients, and

Whereas, The proposed state program for exfoliative cytology screening constitutes a further step toward the practice of state medicine, and

Whereas, The procurement of full pathology coverage in small rural hospitals is difficult and would be further jeopardized by additional encroachments upon the private practice of such pathologists, therefore

Be it resolved, That the House of Delegates of the Missouri State Medical Association disapproves the presently proposed exfoliative cytology screening program by the Missouri State Department of Health, and further, it recommends to the Director of the Department of Health that the facilities of physicians in private practice be utilized to implement any expanded laboratory program.

(Referred to the Committee on Medical Education.)

Dr. Walter T. Gunn submitted the following resolution from the St. Louis Medical Society:

This crystal-clear drink
has a crystal-clear label
7up
YOU LIKE IT IT LIKES YOU
SEVEN-UP
YOU LIKE IT IT LIKES YOU
CONTAINS CARBONATED WATER, SUGAR, CITRIC ACID, SODIUM CITRATE, FLAVOR DERIVED FROM LEMON AND LIME OILS.
"Fresh Up" with 7up
CONTENTS 7 FL. OZS.

Pour chilled, sparkling 7-Up, and you can't fail to notice how clear it is. Read the 7-Up label. Its message comes through the same way. A clear statement of quality.

Seven-Up lists all its ingredients right on the bottle. We want you to know exactly what goes into this refreshing soft drink. How pure it is. How wholesome.

Each ingredient is as good as nature and science can make it. Important, too, is the exclusive way all ingredients are combined.

Next time you want a fresh, clean taste, "fresh up" with 7-Up.

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Shenandoah, Ia.

Whereas, The Congress of the United States is currently considering legislation regarding the so-called National Program for Treatment of Strokes, Heart Disease and Cancer and

Whereas, This Program as now projected, aims to set up a system of regional subidiary centers for research and teaching and treatment of these diseases, and

Whereas, It is unwise to establish any medical care plan were lessens the responsibility of the local physician to his patient in prevention, diagnosis and treatment of these diseases; therefore, be it

Resolved, That the MSMA through its Council investigate this program actively and diligently in order to help shape pending legislation with its objectives directed toward the best interest of the patient and the expenditure of funds where they will do most good, and therefore, be it further

Resolved, That the results of this investigation be published in Missouri Medicine and that a copy of these results be forwarded to the proper authorities at the AMA Headquarters, for their implementation.

(Referred to the Committee on Miscellaneous Affairs.)

Dr. Howard McAlhany submitted the following resolution from the Greene County Medical Society:

Whereas, The Kerr-Mills Law is an appropriate way in which the Federal Government can cooperate with states in assisting them to help aged persons who cannot meet their medical expenses; and

Whereas, It permits and encourages local participation and flexibility so as to stimulate individually designed programs; and

Whereas, One of the most widely used arguments in favor of King-Anderson compulsory Social Security Payroll Tax proposal is the accusation that the Kerr-Mills Law is not being fully implemented in many states as fast as it might be and that "it cannot do the job"; and

Whereas, The Missouri State Medical Association has fully endorsed the enactment of the Kerr-Mills Law in Missouri; therefore be it

Resolved, That the Missouri State Medical Association aggressively support the full implemention of the Kerr-Mills Law in Missouri so as to achieve its objective of fairly helping those persons over 65 years of age who have been exposed to major medical expenses that are beyond their financial resources; and be it further

Resolved, That copies of this resolution be sent to the members of the House and Senate of the Missouri Assembly.

(Referred to the Committee on Resolutions.)

The new officers, councilors and AMA delegates take their oaths of office during the final session of the House of Delegates.

Dr. James C. Sisk submitted the following resolution from the St. Louis County Medical Society:

Whereas, The By-Laws of the Missouri State Medical Association have no provision for the omission of dues in the event of a hardship case, and

Whereas, It is believed that there should be some provision in the By-Laws providing for same, now therefore be it

Resolved, That the said By-Laws be and the same are hereby amended in this respect, that Section 3 of Chapter XI of said By-Laws be, and the same is hereby amended by adding the following as a new paragraph after paragraph 3:

"The Council may, upon request of a component society, remit the state dues and assessment of a deserving member found to fall within what is classified as a hardship case, during the period of said hardship until such time as the dues again become payable; provided, that the component society shall remit the county society dues of such member."

Dr. Edwin M. Powell submitted the following resolution from the Greene County Medical Society:

Whereas, An act to amend Chapter 336, RSMo, pertaining to the practice of optometry and the regulation thereof (known as House Bill No. 275 of the 73rd General Assembly) has been introduced; and

Whereas, Such act would prevent any official, employee, board, commission, or agency of the State of Missouri, county, municipality, school district or any other political subdivision of the State from "discriminating between practictioners of optometry and other ocular practitioners; and

Whereas, The use of the word "discriminate" in the act is a subterfuge to produce a sympathy toward the practitioners of optometry; and

Whereas, The practitioners of optometry have had a minimum of four years and a maximum of six years of general and optometric training beyond high school which does not include a Medical Degree, as compared to certified ophthalmologists who have had a minimum of ten years beyond high school, which includes a Medical Degree plus hospital training in disease and surgery of the eye; and

Whereas, Optometrists are licensed primarily to examine for glasses and they are in no way legally or educationally qualified to completely diagnose, treat, or medically advise concerning eye disease or surgery; therefore be it

Resolved, That the Missouri State Medical Association go on record as opposing House Bill No. 275; and be it further

Resolved, That copies of this resolution be sent to the members of the House and Senate of the Missouri Assembly.

(Referred to the Committee on Resolutions.)

Dr. Kenneth E. Knabb offered the following resolution from the Greene County Medical Society:

Whereas, The physicians of Missouri have always been in favor of providing health care for all those in financial need at the time of their need, to the fullest extent of their need; and

Whereas, The physicians believe that health care for those in need may be provided best through local, state and federal governments cooperating and using general revenue funds; and

Whereas, H.R. 6675, the present "Medicare" Bill, would require a direct regressive payroll tax to support a direct federal medical service program for all persons over 65 years of age, regardless of their need for help; and

Whereas, H.R. 3727 and similar legislative proposals known as the Eldercare Act of 1965, would provide federal-state financing of comprehensive health care for those needing assistance with simplified provisions for obtaining eligibility; therefore be it

Resolved, That the Missouri State Medical Association enthusiastically support the enactment of the Eldercare Program H.R. 3727 (introduced by Representatives Herlong and Curtis in the 89th Congress); and be it further

Resolved, That the Missouri State Medical Association reaffirm its opposition to H.R. 6675 which would threaten the high quality of medical care in this country; and be it further

Resolved, That copies of this Resolution be sent to the members of Congress from the state of Missouri and our Senators from Missouri plus the Finance Committee of the U. S. Senate.

There being no additional business, the Speaker declared the First Session of the House of Delegates adjourned.

SECOND SESSION
Monday, April 5

The Second Session of the House was called to order at 4:00 p.m. in the Chase Club with Doctor Peterson, Speaker, presiding. Doctor Sexton, Chairman of the Credentials Committee, reported that a quorum was present.

Dr. B. J. Bass, Chairman of the Reference Committee on Reports of Officers, was invited to make his report to the House.

REPORTS OF OFFICERS

The Reference Committee on Reports of Officers met in the Park Room of the Chase Hotel, on Sunday, April 4, at 3:30 p.m. All members were present.

The address of the President-elect was reviewed and approved. The report of the Secretary, the report of the Treasurer, and the report of the Executive Secretary were

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all reviewed and approved. The report of the President-elect of the Woman's Auxiliary, Mrs. Ralph Bohnsack, was reviewed and approved by the Committee.

The Committee reviewed the address of the President, Dr. Leonard T. Furlow, taking special note of and making the following recommendations concerning licensure of paramedical groups and offers the following resolution for the consideration of the House of Delegates.

Whereas, The licensure of paramedical groups is the subject of much interest and is currently under the consideration of the Missouri General Assembly, therefore be it,

Resolved, That the House of Delegates of the Missouri State Medical Association go on record as opposing the *licensing* of any specific paramedical group, and be it further,

Resolved, That in the interest of encouraging recognition and support for advanced training and knowledge in a specific paramedical field that the House of Delegates of the Missouri State Medical Association encourage these individual paramedical groups to establish their own *certification* organizations for this purpose.

However, should such licensure of paramedical groups occur in the State of Missouri, be it further,

Resolved, That it is the recommendation of the House of Delegates of the Missouri State Medical Association that such licensure be granted under the auspices of the State Board of Healing Arts.

Mr. Speaker, I move that this portion of the report be adopted.

(It was noted that another resolution concerning licensure was to be introduced. For this reason the House approved a motion that the report be accepted but that the proposed resolution be referred to the Committee on Resolutions for final consideration.)

The Committee next considered the report of the Council of the MSMA and the Council's request for a further definition by this House of Delegates of the ethical relationships between osteopathic groups and individual medical practitioners or groups and vice-versa, in situations in which it would be difficult to determine the practice attitudes of each of the members of the group.

The Committee carefully reviewed the report and recommendations of the Judicial Council of the AMA adopted by the House of Delegates in June, 1961 and also the resolution on osteopathy adopted by the 1962 MSMA House of Delegates. The Committee therefore proposes the following resolution on osteopathy by the 1965 MSMA House of Delegates.

Whereas, Osteopathic physicians provide the only medical service available in many communities and in the interest of complete care of the patient require consultation with competent physicians, and

Whereas, In some tax supported institutions the relationship between Osteopathic and M.D. physicians is such as to compel consultation, and

Whereas, Fund raising campaigns for improvement and building of hospitals are often jeopardized where Osteopaths represent a large segment of dispensers of medical services in the community, and

Whereas, Certain diagnostic services provided by government agencies now and in the future must be maintained solely for Osteopathic physicians because they are denied consultation services with M.D. physicians, and

Whereas, Certain highly specialized medical services are not now available to the patients of osteopathic physicians causing the quality of medical care in large segments of Missouri to remain at less than a satisfactory level, and

Whereas, Prepaid third party indemnity and service plans already permit Osteopaths to participate, and

Whereas, The single licensure law in Missouri is in effect acceptance of the fact that Osteopathy is for practical purposes now regarded as having a scientific basis rather than being classified as a cult, now therefore be it

Resolved, That in order to improve the quality of medical care in Missouri, M.D. physicians may consult with osteopathic physicians or groups and participate in post-graduate education specifically designed for their needs, if so invited. This is not to be construed that they must under any and all circumstances accept such consultations or invitations, and be it further,

Resolved, That whereas the local medical society is best equipped to evaluate the professional ability of the local osteopathic physicians, their approval should be sought prior to implementing an educational program or a consulting service in the local area. This offers a continued opportunity for improved professional relationships and exchange of ideas between local osteopathic and medical societies.

Mr. Speaker, I move the adoption of this portion of the report.

(Some opposition developed during a brief discussion, but the House approved a motion to adopt.)

The Committee has received a communication from Dr. George Ulett, Director of Mental Diseases which reads as follows:

"Inasmuch as the Reference Committee on Reports of Officers is considering a resolution regarding the relationship between D.O.'s and M.D.'s, I wish to bring to your attention the fact that the Kansas City School of Osteopathy has approached our Division with the request for permission to send residents from their psychiatric training program to one of our Institutions for experience in the field of clinical psychiatry.

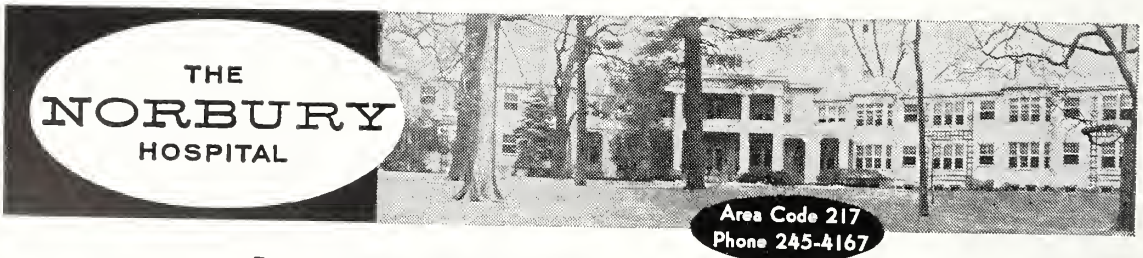
A similar problem faces us with the request of a practicing D.O. in the Farmington area to participate in a postgraduate training course in psychiatry now offered at the Farmington State Hospital.

Under the state laws and as one responsible for the operation of tax supported institutions, our Division feels an obligation to offer this opportunity to these D.O.'s in the interest of better patient care. It is our feeling that such cooperation falls within the meaning of the 1962 resolution of the Missouri State Medical Association Council."

We present this for your information.

Mr. Speaker, I move the adoption of this report in full.

A question was raised about the possibility of endangering approved and accredited residency training programs by opening them to osteopathic physicians without proper controls. Assurance was given that Doc-



a Private Psychiatric Center at Jacksonville, Illinois, *since 1901*

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LICENSED: Illinois Department of Mental Health.
MEMBER: Illinois Medical Service (Blue Cross-Blue Shield).

tor Ulett did not contemplate any action which would jeopardize an existing program, but would use only those state institutions which do not have approved residency training. The motion to adopt the full report was approved.

Dr. George D. Shull, Chairman of the Miscellaneous Affairs Committee, was invited to make his report to the House.

MISCELLANEOUS AFFAIRS

The Reference Committee on Miscellaneous Affairs met in the Palladian Room, Hotel Chase, Sunday, April 4, at 4:00 p.m. with the following members present: Drs. George D. Shull, Chairman, R. V. Bradley, George Lytton, Rae Froelich, and Joe Zimmerman.

A resolution was introduced by the Saint Louis Medical Society

SUBJECT: Program on Strokes, Heart Disease and Cancer

Whereas, The Congress of the United States is currently considering legislation regarding the so-called National Program for Treatment of Strokes, Heart Disease and Cancer and

Whereas, This program as now projected, aims to set up a system of regional subsidiary centers for research and teaching and treatment of these diseases, and

Whereas, It is unwise to establish any medical care plan which lessens the responsibility of the local physician to his patient in prevention, diagnosis and treatment of these diseases; therefore, be it

Resolved, That the MSMA through its Council investigate this program actively and diligently in order to help shape pending legislation with its objectives directed toward the best interest of the patient and the expenditure of funds where they will do most good, and therefore, be it further

Resolved, That the results of this investigation be published in Missouri Medicine and that a copy of these results be forwarded to the proper authorities at the AMA Headquarters, for their implementation.

Committee recommends adoption of this resolution.

(A motion to adopt was approved by the House.)

The Report of the Committee on Mental Health was accepted with the understanding that further investigation and study seems necessary regarding Section 192.025 and 202.020 of the bill now in the Missouri Legislature concerning the separation of the Division of Mental Diseases from the Division of Health and Welfare.

(A motion to adopt this section of the report was approved by the House.)

The Report of the Public Service Committee was approved in its entirety.

(Adopted by House.)

The Committee on Aging did not submit a report. In view of the increasing problems of the aged, your reference committee feels that our Committee on Aging may well investigate and study some of these problems.

(Adopted by House.)

The Report of the Committee on Medical Economics was accepted, but it is suggested that a more extensive study of some of the problems of medical economics be undertaken by this committee.

(Adopted by House.)

Doctor Shull moved that the Committee's entire report be adopted. The motion carried.

Dr. Jerome Simon, Chairman of the Reference Committee on Constitution and By-Laws, was invited to make his report.

CONSTITUTION AND BY-LAWS

The Reference Committee on Constitution and By-Laws met in the Coach Room at 4:00 p.m., Sunday, April 4, 1965. The following members were present: Drs. Jerome Simon, Chairman; James Campbell; R. A. Hickstep; and Dillard M. Eubank.

Doctor Furlow's resolution that the immediate Past President be made a full member of the Council was considered and the Committee recommends passage of this resolution. Mr. Speaker, I move the adoption of this portion of the report.

(The Speaker noted that this proposal will require a change in the Constitution and any such proposal must lay over for one year before the House can take final action. It was so ordered.)

The proposed amendment to the By-Laws of the Missouri State Medical Association, Chapter VII, Section 2, page 7, to change the name of the Committee on Civil Defense Disaster Medical Care to the Committee on Disaster Medical Care and National Defense was discussed. The Committee recommends that the By-Laws be amended accordingly. Mr. Speaker, I move the adoption of this portion of the report.

(The Speaker explained that the House could accept the report but that formal action on the By-Laws change would have to be postponed until the Wednesday morning session to satisfy the 24-hour waiting provision of the Constitution for By-Laws changes. The section of the report was adopted.)

The recommendation that the By-Laws of the Missouri State Medical Association, Chapter VII, Section 2, page 8, paragraph 6, be amended to read as follows was considered:

"The Committee on Disaster Medical Care and National Defense shall consist of ten members of the Association, appointed annually by the President, one from each of the ten Councilor Districts, and, in addition, any other members who are interested in the medical aspects of Disaster Medical Care and National Defense; the

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The Missouri State Medical Association since 1943 has made available to its members a Special Disability Income Benefits Policy issued by our "Loyalty Group" Companies now a part of the America Fore-Loyalty Group Insurance Companies—the largest casualty-fire underwriting group in the world. The low cost at which the policy is offered is made possible through the purchasing power of the membership of your association as a whole.

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(Eastern Missouri Administrators)

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(Western Missouri Administrators)

Committee shall concern itself with the development of Disaster Medical Care and National Defense operations in the state and shall cooperate with public officials and private organizations in the furtherance of Disaster Medical Care and National Defense activities."

Mr. Speaker, the Committee recommends the adoption of this amendment.

(The House accepted the report, and the Speaker ordered that formal action on adopting the By-Laws change be laid over for the Wednesday morning session.)

The resolution concerning the omission of dues in the event of a hardship case was considered, and the Committee recommends that Section 3 of Chapter XI of the By-Laws of the Missouri State Medical Association be amended by addition of the following as a new paragraph after paragraph 3:

"The Council may, upon request of a component Society, remit the state dues and assessment of a deserving member found to fall within what is classified as a hardship case, during the period of said hardship until such time as the dues again become payable; provided, that the component Society shall remit the county Society dues of such member."

Mr. Speaker, I move the adoption of this portion of the report.

(The motion was approved, and the Speaker ordered the proposed By-Laws amendment to be referred to the Wednesday morning session for final consideration.)

The resolution of the Council (meeting of Feb. 13-14, 1965), recommending that the status quo as pertains to the location of the Association office be maintained, was discussed at length by proponents and opponents. The majority of the Committee voted to support the Council's resolution, but Dr. Eubank submitted a minority report and the following substitute resolution:

Be It Resolved, That the recommendation of the Council of the Missouri State Medical Association, that the status quo of the Executive Office be maintained, be disapproved and be it further,

Resolved, That the Council of the Missouri State Medical Association be instructed by the House of Delegates of the Missouri State Medical Association to proceed with further studies to acquire impartial and unbiased statistics and data on the subject of the location of the Executive Office of the Missouri State Medical Association, and be it further.

Resolved, That the summation of this information and the report on such data and statistics shall be disseminated by the Executive Office of the Missouri State Medical Association to each elected delegate, alternate delegate, councilor, officer of Missouri State Medical Association and to the President and Secretary of each component county or hyphenated county medical Society of the Missouri State Medical Association.

Doctor Eubank moved the adoption of this substitute resolution.

(The Speaker explained the parliamentary situation as it applies to a substitute motion, and after a brief discussion the substitute resolution was approved by the House. Doctor Simon moved adoption of this portion of the Committee's report with the substitute resolution. Motion carried.)

The Committee next considered the proposed amendment to Section 2, Chapter III, of the By-Laws, which pertain to the report of the special Committee on Delegate Representation in the House of Delegates of the Missouri State Medical Association. The Committee recommends changing the By-Laws so that Section 2, Chapter III, as amended will read as follows:

"Section 2. Each component county society shall be entitled to send each year, one delegate or one alternate to the House of Delegates for each fifty full paid members or fraction thereof in the Association on December 31 of the previous year, plus one additional delegate or alternate for each one hundred members or a major fraction thereof; provided, however, that each component society which is composed of two or more county societies shall be entitled to at least one delegate or one alternate from each of the counties of which it is composed; however, such delegates or alternates must reside in the county they represent."

Mr. Speaker, I move for adoption of this portion of the report.

(There was lengthy discussion on the floor and Dr. O. W. Cook, a member of the special Delegate Representation study committee, asked the record to show that he did not approve of the proposal. On a vote by show of hands, the proposal was defeated, 60 to 54.)

Mr. Speaker, the Committee approved the proposed amendment to the By-Laws concerning the assessment of $7.50 per year for a three year period beginning in 1966, applicable to each active member, and $3.75 to each junior member of the Association. The money collected from this assessment goes to the Missouri State Medical Foundation. I move the adoption of this portion of the report.

(The motion was approved and the Speaker ordered the proposal to amend the By-Laws be laid over for final action by the House at its Wednesday morning session.)

The Committee also recommends approval of the following resolution relating to the establishment of Grievance Committees at the Councilor District level:

Resolved, That the By-Laws of Missouri State Medical Association, Chapter VI, Section 4, be amended by striking out all of said Section 4 and inserting in lieu thereof the following:

Section 4. The District Councilor together with two members of component societies within the Council District selected by the Councilor shall serve as a Board to hear and by a majority vote adjudicate any questions involving the right and standing of members, either in relation to other members or to component societies or to the Association, and all matters of discipline affecting the conduct of members of component societies, or other matters.

The Council shall be the appellate Board of Censors of the Association. It shall hear and adjudicate all matters on appeal from the decision of the Councilor Board; it shall hear and adjudicate matters of an ethical nature brought before the House of Delegates or the general meeting which shall be referred to the Council without discussion. On original decision or appellate determination, its decision shall be final unless appealed to the then convened meeting or the next meeting of the House of Delegates.

Your Committee moves for the adoption of this portion of the report.

(The motion carried and the proposed By-Laws change was referred to the Wednesday morning session of the House for final action.)

The Committee recommends that the Council's action in assisting in the legal defense of a member pyhysician to the extent of $300, according to the By-Laws, be approved by the House.

(The motion to approve was passed, and a motion to accept the Committee's full report as amended and altered was approved.)

Dr. Lloyd Stockwell was invited to make the report of the Reference Committee on Resolutions.

RESOLUTIONS

The meeting of the Reference Committee on Resolutions of the Missouri State Medical Association was held at 4:30 p.m. on Sunday, April 4, 1965 in the Colonial Room with the following members present: Chairman, Lloyd Stockwell, John Martin, R. R. Donley, Carvel Shaw and A. M. Repetto.

The Committee first considered the resolution regarding opposition to House Bill 275, submitted by the

Greene County Medical Society. We recommend House approval of this resolution.

(The motion to approve carried.)

The Committee considered the resolution on full implementation of the Kerr-Mills Law in Missouri. We recommend approval of this resolution and I move adoption of this portion of the report.

(The motion was approved.)

The Committee considered the resolution supporting the Eldercare proposal of 1965 and opposing the King-Anderson approach to medical care for the aged. We recommend that no action be taken on this resolution since the subject has already been adequately covered by previous actions.

Dr. John Griffith pointed out that Missouri does have a portion of the Kerr-Mills program in operation, but too many physicians are not aware of this fact. The program which is in effect is under the OAA (Old Aged Assistance) program; the Kerr-Mills provision which was vetoed by the last Governor was a further expansion of the program, to cover the medically indigent.

(The Committee report with Doctor Griffith's additional remarks was approved.)

Dr. William Snead was invited to present the report of his reference committee on Medical Education and Public Welfare.

MEDICAL EDUCATION AND PUBLIC WELFARE

The Reference Committee on Medical Education and Public Welfare met at 4:45 p.m., April 4, 1965 in the Embassy Room of the Chase Hotel. The following committee members were present: Drs. William Snead, Springfield, Chairman; Thorpe Ray, Columbia; C. B. Wheeler, Kansas City; C. Howe Eller, St. Louis; and James Pascoe, Nevada.

It was recommended that the published reports of the following standing committees be adopted:

1. Scientific and Postgraduate Work.
2. Publication.
3. Infant and Child Care.
4. Control of Venereal Disease.
5. Diabetes.
6. Maternal Welfare.
7. Civil Defense Disaster Medical Care.
8. Rural Medical Service.
9. Radiology and Ionizing Radiation.
10. Industrial Health.
11. Laboratory Medicine.
12. Study of Cardiac Disease.

On motion, duly seconded, this portion of the report was accepted, by the Committee.

Mr. Speaker, I move the adoption of this portion of the report.

(Motion approved.)

The Committee heard considerable discussion on the Dunklin County resolution concerning the proposed exfoliative cytology screening program of the Missouri State Division of Health. The Committee recommends that the resolution not be approved by the House of Delegates.

The Committee further recommends that the House of Delegates commend the State Division of Health for its philosophy and desire to cooperate with the privately practicing physician and physician-directed laboratories. It further commends the Missouri Society of Pathologists for providing laboratory services for the indigent and near needy on a professional basis. The Committee recognizes the need for close communication between the State Division of Health and the Missouri Society of Pathologists to delineate differences of areas of disagreement. It urges practicing physicians to utilize services of private pathologists whenever possible.

Mr. Speaker, I move the adoption of the report as a whole.

(The motion carried.)

Dr. Joseph Jaeger was invited to present the report of the Reference Committee on Necrology.

NECROLOGY

The Reference Committee on Necrology met in the English Room, Chase Hotel, on Sunday, April 4, 1965, with all members present. The following resolution was adopted by the Committee:

WHEREAS, There have been 76 deaths among our members since the last Annual Session, including that of a Vice-President of the Association, and

WHEREAS, Each member is missed personally and for contributions to the practice of medicine, and

WHEREAS, The loss of these members is felt by all members and keenly by those who were close to them, and

WHEREAS, Condolences have been sent to each family, therefore, be it

Resolved, That condolences continue to be sent to each family, and be it further

Resolved, That the House of Delegates stand for a moment of silence in memory of those we have lost and whose names will appear in the minutes of the Annual Session.

Mr. Speaker, I move the adoption of this report.

(The Speaker asked Delegates and guests to stand for a moment of silence as the resolution was approved.)

Members Deceased Since the 1964 Session

Bailey, Fred W., M.D., St. Petersburg, Fla.
Gansloser, Max W., M.D., St. Louis
Beckman, William, M.D., Strasburg
Swekosky, Frank J., M.D., St. Louis
Lerner, Abe F., M.D., University City
Weiss, Richard S., M.D., Clayton
Monahan, Elmer P., M.D., Lenexa, Kansas
Gillmor, Charles S., M.D., Kansas City
Robinson, Edward E., M.D., Shawnee Mission, Kansas
Hartwell, Basil O., M.D., Drexel
Hines, Arthur A., M.D., Florissant
Kettlekamp, George D., M.D., St. Louis
Gilliland, Oliver S., M.D., Kansas City
Esker, George, M.D., Nevada
Penn, Robert, M.D., Silex
Booth, Herbert R., M.D., Hamilton
Ruddell, George W., M.D., Ferguson
Hardesty, Joel W., M.D., Hannibal
Lacey, N. Eugene, M.D., Kansas City
Hale, Tyre H., M.D., St. Louis
Harmann, Martin F., M.D., St. Louis
Lissack, Edmund H. M., M.D., Concordia
Young, John S., M.D., St. Louis
Foster, Robert L., M.D., St. Louis
Zeinert, Oliver B., M.D., University City
Sullivan, William J., M.D., Providence, R. I.
Dixon, Otto J., M.D., Kansas City
Schmidt, Herbert H., M.D., Marthasville
Webster, Joseph G., M.D., Kansas City
Gaebe, Harold C., M.D., Desloge
Brown, Eugene R., M.D., University City
Hirsch, Albert, M.D., Vandalia
Gissy, Carl J., M.D., St. Louis
Gaston, Ralph E., M.D., St. Louis
Lawless, Charles L., M.D., Marshall

Talbott, Hudson, M.D., Louisville, Kentucky
Gay, George, M.D., Ironton
Gowen, Leo F., M.D., St. Louis
Hartmann, Alexis F., M.D., St. Louis
Hobbs, Alonzo G., M.D., St. Louis
Jeffries, Robert C., M.D., Kansas City
Perry, John M., M.D., Princeton
Todd, Thomas B., M.D., Nevada
Williamson, Oscar E., M.D., St. Louis
Willis, Norman E., M.D., Poplar Bluff
Casey, Shedric A., M.D., Lebanon
Plumlee, William C., M.D., Springfield
Coil, Paul E., M.D., Mexico
Stewart, Floyd, M.D., St. Louis
Duncan, Ralph E., M.D., Kansas City
Trowbridge, Ellsworth H., M.D., Prairie Village, Kansas
Bleyer, Adrien S., M.D., Webster Groves
Sante, LeRoy, M.D., Webster Groves
Smith, Robert M., M.D., Ladue
Hunter, James R., M.D., Webster Groves
Penney, David L., M.D., St. Louis
Aubin, Francis W., M.D., Branson
Carlisle, John B., M.D., Sedalia
Cook, Jerome E., M.D., University City
Box, Earnest M., M.D., Springfield
Hill, Jesse N., M.D., Independence
Ziegler, Allen M., M.D., Holden
Benincasa, Anthony V., M.D., Normandy
Feller, Charles E., M.D., Springfield
Boody, Robert J., M.D., Mission, Kansas
Johnson, Frank C., M.D., Doniphan
Long, Frank B., M.D., Sedalia
Wiener, Meyer, M.D., Coronado, Calif.
Diehr, Alvin H., M.D., Ladue
Cullers, Charles H., M.D., Trenton
Marston, Warren G., M.D., St. Louis
Dieekman, William C., M.D., Dexter
Keller, Joseph M., M.D., St. Louis
Dyer, David P., M., M.D., Sedalia
Wright, John L., M.D., Poplar Bluff
Carney, Roscoe P., M.D., St. Louis

A portion of the honored guests table at the Annual Presidents' Banquet. (foreground, l. to r.) Dr. and Mrs. Walter T. Gunn, Dr. and Mrs. Ben M. Bull, Dr. and Mrs. David N. Kerr.

The Speaker called for New Business and recognized Dr. Joseph Edwards, who introduced the following resolution:

Whereas, proposed or pending legislation affecting the practice of medicine and the public welfare in the state and federal legislatures is of utmost importance to physicians and patients, and

Whereas, At present there is no official committee of the Missouri State Medical Association to which is referred such important matters, and

Whereas, In between meetings of the State Council and the annual meetings of the MSMA there is no stated committee to which the office of the MSMA can refer such matters before the legislatures for further discussion and critical evaluation for the use of the officers and members of the MSMA, therefore, be it

Resolved, That the House of Delegates of Missouri State Medical Association authorize the establishment of an official committee on legislative matters affecting the practice of medicine and public health to be known as the Committee on Legislative Matters.

Referred to the Reference Committee on Constitution and By-Laws.

Dr. Edward Kinsella was recognized and introduced the following resolution:

Whereas, Over the years the American Medical Association has frequently been blamed and criticized for a national image of reactionary opposition to federally sponsored public health plans and

Whereas, The AMA is frequently accused of failure to represent the opinion of the majority of physicians, therefore be it

Resolved, That we of the MSMA publicly endorse the basic precepts enunciated by the AMA in its opposition to these plans, currently and specifically Medicare, and reaffirm our support of the American Medical Association, be it further

Resolved, That regardless of the outcome of pending health care legislation, the AMA be encouraged to exhibit a progressive imaginative leadership in the study and furthering of attractive alternatives to a socialized system of medicine which will otherwise follow in the evolutionary sequence of events, and be it further

Resolved, That notification of this action be forwarded to the AMA and all State Medical Societies.

Referred to the Committee on Resolutions.

Dr. R. D. Dwyer was recognized for the purpose of introducing the following resolution:

Whereas, The medical profession in the State of Missouri has had need and will continue to have need in the future for the use of ancillary services to be performed by laymen either working in th employment of medical doctors or in medically supervised separate laboratories; and

Whereas, These ancillary services are of various kinds and performed by various people, but all serve a useful and integral part in the providing of medical care to the public; and

Whereas, Various ophthalmologists have prescribed for patients contact lenses to be prepared and fitted under the medical doctor's prescription by lay ancillary workers, working either in the doctor's office or at their own premises, with the patient being sent back to the medical doctor for the medical doctor to check the work done by the lay ancillary worker; and

Whereas, The Missouri State Board of Optometry has recently sent letters to various laymen performing such ancillary services calling upon them to cease and desist and charging them with practicing optometry without a license; and

Whereas, The relationship of the medical profession to their ancillary workers is thereby being jeopardized and, unless legal action is taken, there is jeopardy that the medical profession will lose the valued and well needed services of such lay workers performing ancillary services to the medical profession; now, therefore, it is hereby

Resolved, That the Missouri State Medical Association, acting by and through its officers, representatives and counsel be authorized to take indicated and necessary action or institute legal proceedings and a declaratory judgment suit, in conjunction with representative lay workers if deemed appropriate, to determine the rights of such ancillary workers to perform their ancillary services aforementioned, and to do all things legal and necessary to protect the rights of the medical profession to obtain the benefits of ancillary services useful or needed in the practice of medicine.

Referred to the Reference Committee on Resolutions.

Doctor Dwyer then introduced a second resolution, as follows:

Whereas, In June 1961 the American Medical Association House of Delegates passed the Bauer Statement which reads as follows:

"The House of Delegates believes that the Medical Profession will see to it that every person receives the best available medical care regardless of his ability to pay; and it further believes that the profession will render that care according to the system it believes is in the public interest; and that it will not be a willing party to implementing any system which we believe to be detrimental to the public welfare."

WHEREAS, It has become apparent that compulsory social insurance medicine will be a part of whatever omnibus health care or Social Security bill is offered this Congress; and

WHEREAS, The built in controls in any such system would make hospitals, patients, and physicians subordinate to the Secretary of Health, Education and Welfare; therefore be it

Resolved, That each of the members of the Missouri State Medical Association is urged to refuse to be a party to any such regimentation: and be it further

Resolved, That the membership is also urged to call this resolution to the attention of colleagues, hospital administrations, and the public, and that copies be sent to Representatives, Senators, Division of Health, Welfare and Education and to the President of the United States.

Referred to the Reference Committee on Resolutions.

Dr. George Lytton was recognized for the purpose of introducing the following resolution:

WHEREAS, Paramedical professional personnel, by definition, should operate under the direction and liability protection of a physician, and

WHEREAS, State licensure of such personnel has the effect of creating a multiplicity of separate healing arts difficult for a government agency to evaluate, and

WHEREAS, The elevation of standards of a profession is best accomplished by national certifying agencies directed by members of the medical profession who are better aware of the needs of the profession, and

WHEREAS, Protection of the public is best accomplished by maintaining the high educational and moral principles of the medical profession which cannot be guaranteed by state licensure, and

WHEREAS, State licensure (with the usual grandfather clause) may grant status to unqualified persons, and

WHEREAS, State licensure is usually a prelude to petitioning for broader professional powers and privileges, and

WHEREAS, State licensure may preclude the employment of unlicensed individuals considered competent by the directing physician, and thus help create an artificial shortage of paramedical personnel, and

WHEREAS, Competent personnel moving from state to state may be denied the opportunity for gainful employment in their chosen profession, now therefore be it

Resolved, That the Missouri State Medical Association opposes the state licensure of paramedical personnel and that representatives of the Association be selected to testify before legislative committees whenever and wherever such legislation be considered in Missouri.

Referred to the Reference Committee on Resolutions.

Dr. C. R. Macdonnell was recognized for the purpose of introducing the following resolution:

WHEREAS, The 8th Councilor District is aware of the importance of the work by the sub-committee of the National Tuberculosis Committee for the prevention of tuberculosis in the perschool age child, and

WHEREAS, The detection of tuberculosis by skin testing is of paramount importance in the early diagnosis, treatment and prevention of spread of this disease, and

WHEREAS, The application of skin tests to infants and preschool age children has been greatly neglected, and

WHEREAS, The application of this test to infants and preschool children will lead to early diagnosis and treatment of what otherwise may well be a fatal disease, and

WHEREAS, Detection of tuberculosis in infants and preschool children will lead to the source of this infection, therefore be it

Resolved, That it is the recommendation of the 8th Councilor District that routine tuberculin skin testing in the preschool age child be mandatory, preferably beginning with the first six months of life and repeated yearly thereafter if negative, and be it further

Resolved, That the House of Delegates of the MSMA recommend to the Missouri State Legislature that this be added to the existing law governing preschool immunization, and be it further

Resolved, That copies of this resolution be sent to all members of the Missouri State Legislature and to the Governor of the State of Missouri.

Referred to the Reference Committee on Resolutions.

Dr. James Cope inquired concerning the delay which would be involved in creating a new standing committee on legislative affairs and offered the following resolution:

Resolved, That a special Legislative Committee be formed to act for the Missouri State Medical Association until the House of Delegates can take definitive action on making such a committee permanent.

Referred to the Committee on Constitution and By-Laws.

Hearing no additional business, the Speaker adjourned the session.

THIRD SESSION
Wednesday, April 7

The Third and Final Session of the House was called to order following a 7:30 a.m. breakfast in the Khorassan Room. The Speaker, Doctor Peterson, presided. Doctor Sexton, Chairman of the Credentials Committee, reported that a working majority of Delegates was present. With unanimous consent, the Speaker dispensed with a roll call and reading of the minutes of the two previous sessions.

Dr. Arthur Neilson was recognized to outline plans for the campaign in support of Dr. Durward Hall as the next President-Elect of the AMA. He urged full support of the effort by Missouri physicians, especially in making personal contacts and appeals to AMA delegates from the various states. Doctor Peterson reminded the House members that such a campaign also needs financial support.

Dr. John Matthews, Association Secretary and Chairman of the Special Legislative Committee, reported on the status of various medical and health proposals in the current session of the Missouri General Assembly.

Dr. Avery Rowlette, Chairman of the Nominating Committee, was asked to give the report of his committee.

NOMINATING COMMITTEE

The Nominating Committee met yesterday at 4:30 p.m. in the Park Room with all Districts represented. We would like to present the following slate:

For First Vice President—Charles Sherwin, St. Louis.

Second Vice President—Roy Pearse, Nevada.

Third Vice President—Harold Miller, Willow Springs.

Delegates to the AMA—A. W. Neilson with Alternate, Robert Kelley; Richard H. Kiene with Alternate, Hugh Stephenson.

Speaker of the House—Stanley S. Peterson.

Vice Speaker—Paul F. Max.

Mr. Speaker, I move the acceptance of this report.

(Nominations were invited from the the floor, but none were made. Motions to close the nominations and to cast a unanimous ballot for the Committee's recommendations were carried.)

HAMILTON-SCHMIDT SURGICAL COMPANY
St. Louis, Missouri
Surgical Instruments, Invalid and Sick Room Supplies
Post-Operative Belts, Elastic Hosiery and Trusses Fitted
JEfferson 1-3222 **3456 Lindell Blvd.**

The Speaker asked for nominations for the office of President-Elect. Dr. G. W. Winn nominated Dr. Byron M. Stuart. Seconding speeches were made by Drs. Walter Gunn and William Mixson. A motion that the nominations close and that Doctor Stuart be elected by acclamation carried without opposition. The newly elected President-Elect was escorted to the speaker's stand where he made a brief speech of acceptance and thanks.

Doctor Winn announced that the Fifth Councilor District had elected Dr. James C. Cope to serve the unexpired portion of Doctor Stuart's term on the Council.

Doctor Matthews reported on the regular Councilor District elections. The Second District selected Dr. Lysle M. Bach; Fourth District, Dr. Robert A. Mayer; Sixth District, Dr. Rolla Wray; Eighth District, Doyle C. McGraw; and Tenth District, W. D. English.

The Speaker called for final reports from the Reference Committees. The Committee on Reports of Officers had nothing further. The Committee on Miscellaneous Affairs had nothing to report. The Committee on Medical Education and Public Welfare had no additional report. The Committee on Necrology had nothing to report.

Doctor Simon, Chairman of the Committee on Constitution and By-Laws was recognized.

CONSTITUTION AND BY-LAWS

The Reference Committee on Constitution and By-Laws met in the Coach Room at 6:00 p.m., Monday, April 5. The following members were present: Drs. Jerome Simon, St. Louis, Chairman; James Campbell, Macon; R. A. Huckstep, Farmington; Dillard M. Eubank, Raytown; and G. A. Schulte, Joplin.

The resolution presented by Dr. Joseph Edwards, St. Louis, on the establishment of a permanent Standing Committee on Legislative Matters was discussed.

A resolution also submitted by Dr. James Cope of Columbia, Missouri, calling for appointment of a Special Legislative Committee to function as an interim committee was deemed unnecessary for the following reason:

Our Committee was advised that at its meeting in February, 1965, the Council appointed a Special Legislative Committee to serve the purpose set forth in Dr. Cope's resolution. This Committee is in existence and is functioning at the present time.

The Committee on Constitution and By-Laws approves the resolution to create a permanent Standing Committee on Legislative Matters, as presented by Dr. Edwards.

Mr. Speaker, I move for adoption of this report as a whole.

(On second, this report was adopted.)

Dr. A. M. Repetto, a member of the Committee on Resolutions, was asked to make the final report for that committee.

RESOLUTIONS

The Reference Committee on Resolutions met at 10:00 a.m. on Tuesday, April 6, in the Park Room of the Chase Hotel. The Chairman, Dr. Lloyd Stockwell, and members John Martin, R. R. Donley and A. M. Repetto were present.

The Committee considered the resolution by Doctor Macdonnell concerning compulsory tuberculosis testing for preschool children. It was agreed that this resolution should be referred to the Association's Tuberculosis Committee for further study. I move that this portion of the report be adopted.

(Motion carried.)

The Committee next considered the resolution in opposition to compulsory social medicine. To refresh your memory, this was a restatement of our statement that you heard before from the American Medical Association. The Committee felt that this was ill-advised at this time, particularly since we were in the position of opposing something that has not even been passed. We recommend defeat of this resolution. I move the adoption this portion of the report.

(Motion carried.)

We next considered the resolution from St. Louis offered by Doctor Kinsella. The resolution was approved by the Committee and I move the adoption of tjhis portion of the report.

During the discussion on the motion, Doctor Kinsella pointed out that it is not enough for organized medicine to be against socialized medicine. The AMA must show "leadership not only in opposition, but one leading away in constructive alternative proposals."

Doctor Neilson assured the House that the Missouri Delegates to the AMA will carry this view to the AMA House at its meeting this year.

(The motion to adopt this portion of the Committee's report was approved.)

The Committee considered the resolution from Jackson County Medical Society opposing licensure of para-medical personnel and supporting adequate training and certification of persons working in the para-medical fields. We recommend approval of this resolution.

(The motion was approved.)

The Committee considered a very similar resolution that came as a portion of the President's address, again involving state licensure of para-medical personnel. We felt that this had been covered more completely in the previous resolution and therefore recommend that this resolution not be adopted.

(This portion of the report was accepted.)

The Committee finally considered the resolution submitted by Doctor Dwyer of Clay County concerning legal proceedings to protect lay medical workers who perform ancillary services for physicians. We move for its adoption.

(The motion was approved, as was a second motion to accept the Committee's report in its entirety.)

The Speaker asked for action on the various proposals to amend the By-Laws. The following By-Laws changes were adopted with more than the necessary two-thirds majorities:

Change the name of the Committee on Civil Defense and Disaster Medical Care to the Committee on Disaster Medical Care and National Defense:

Provide for the waiving of dues in hardship cases;

Continue the $7.50 special assessment for the Missouri State Medical Foundation for another three years; and

Provision for establishment of grievance committees at the Councilor District level.

The Speaker invited the introduction of new business. Dr. Rae W. Froelich obtained unanimous consent to introduce the following resolution:

Whereas, The Department of Public Health was originally created over 65 years ago of and by the physicians of Missouri to serve the interests of their patients and the public in general, and

Whereas, The present Director of the Missouri Division of Health carries out the original and true function of a public health organization, to augment and assist the private practicing physician in providing for the health care needs of his patients and the community which he as an individual alone is unable to meet, and

Whereas, He has so organized the state health department to direct activities to functions in which government assistance is genuinely needed and the necessity for public services is clearly recognized without displacement of the personal physician, and

WHEREAS, The Director of Health has on innumerable occasions alerted the medical profession and the public in Missouri to the increasing dependency on a centralized Federal society, including activities related to public health, and

WHEREAS, He has done all in his power to reorient the emphasis in use of federal and state funds toward recognition of the private practice of medicine to the lasting benefit of patient and physician, and

WHEREAS, Governor Warren E. Hearnes, despite certain needed reorganizations in administrative departments of the state, has wisely retained this dedicated public servant as head of the Division of Health of Missouri, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association hereby commends H. M. Hardwicke, M.D., Director of the Missouri Division of Health for his unselfish devotion to the needs of the people of the state of Missouri and those who provide their medical care.

Doctor Froelich moved adoption of the resolution, and Dr. B. J. Bass spoke at length in support of the resolution receiving a round of applause at the conclusion of his remarks. Dr. John A. Griffith moved to amend the resolution by deleting in the last "Whereas" the phrase, "despite certain needed reorganizations in administrative departments of the state." His motion was approved, and the motion to accept the amended resolution was approved. The Speaker asked Doctor Hardwicke to stand and be recognized.

The Jackson County delegation invited the Association to hold its next annual convention in Kansas City, March 27-30, 1966. A motion was approved thanking the Local Arrangements Committee and local medical organizations for the 1965 Session.

Newly elected officers and councilors and re-elected councilors were asked to advance to the front of the room where the Secretary, Dr. Matthews, administered the oath of office.

The President, Doctor Whitener, was invited to announce his new committee appointments. The following list is intended to fill vacancies occurring in the Committees which appeared in the July 15, 1964 issue of MISSOURI MEDICINE.

Scientific and Postgraduate Work—John I. Matthews, Jefferson City, Chairman; M. Pinson Neal, Columbia; Associate Members: Richard O. Craig, St. Joseph; Paul B. Anderson, Neosho; Joe L. Spears, Cabool; Paul H. Rother, St. Charles; Charles P. McGinty, Cape Girardeau; R. A. Slickman, Kansas City; Edward D. Kinsella, St. Louis; Roy W. Pearse, Nevada; T. J. Fischer, Hannibal.

Defense—W. W. Gist, Kansas City, Chairman; Roland S. Kieffer, St. Louis.

Medical Education and Hospitals—Wm. A. Knight, Jr., St. Louis, Chairman; Virgil Jeans, Joplin; Association Member; Wyeth Hamlin, Hannibal.

Cancer—John E. Lamy, Sedalia, Chairman; J. Martyn Schattyn, St. Louis; James R. McVay, Jr., Kansas City. Associate Members: Harvey R. Butcher, Jr., St. Louis; Fred B. Collier, Springfield; G. Neil Berry, Kansas City.

Medical Economics—Martin P. Hunter, Kansas City, Chairman; G. W. Winn, Boonville; Herbert C. Wiegand, St. Louis. Associate Members: Kenneth E. Knabb, Springfield; Donald J. Giesler, Osceola; Chester L. Clark, Trenton; C. O. Vermillion, St. Louis; Charles Miller, Jr., Kirkwood.

Mental Health—George W. Forman, St. Joseph, Chairman; James N. Haddock, St. Louis; Henry V. Guhleman, Jefferson City; Robert D. Brookes, St. Louis; D. R. Edwards, Sedalia; Wm. F. Clary, Springfield; Paul L. Barone, Nevada; Edward T. Auer, St. Louis; Robert S. Terrill, Kansas City; Joseph B. Kendis, St. Louis.

Maternal Welfare—A. C. Trueblood, Clayton, Chairman; H. C. Willumsen, St. Joseph; William B. See, Columbia. Associate Members: C. G. Stauffacher, Sedalia; Edward M. Grim, Kirksville; MacDonald Bonebrake, Springfield; E. E. Wadlow, St. Joseph; Paul E. Kratz, Cape Girardeau; Eugene G. Hamilton, St. Louis; Lyman D. Brown, Springfield; Robert S. Brown, Kansas City; Seymour Monat, St. Louis; Leonard A. Wall, Kansas City.

Infant and Child Care—James A. Kinder, Cape Girardeau, Chairman; E. J. Schwartz, Springfield; James K. Mann, Hannibal; H. E. Petersen, St. Joseph; R. J. LaDriere, St. Louis; Guy N. Magness, University City; Ray B. Lewis, Columbia; James J. Pascoe, Nevada; Jack N. Wiles, West Plains; Gerald E. Hughes, Kansas City. Associate Members: C. Read Boles, Clayton; Ben H. Koon, Bolivar; Ernest L. Glasscock, Kansas City.

Constitution and By-Laws—W. A. Bloom, Fayette, Chairman; Kenneth C. Hollweg, Kansas City; James R. Meador, Clayton.

Trauma—Richard E. Lord, St. Louis, Chairman; Paul W. Meyer, Kansas City. Associate Members: Howard J. McAlhaney, Springfield; Carl M. Peterson, Kansas City; Otis E. James, Kansas City; James O. Lottes, St. Louis; L. P. Hetlage, Troy.

Eye Health—Flavious G. Pernoud, Jr., St. Louis, Chairman; Dick H. Underwood, Kansas City. Associate Members: John R. Rufe, Kansas City; S. Albert Hanser, St. Louis; D. E. Eggleston, Macon; John D. Maddox, Joplin; George Mandler, Chillicothe; James H. Bryan, Clayton; Bill G. Prater, Springfield.

Industrial Health—Douglas A. Ries, St. Louis, Chairman; Van W. Taylor, Bonne Terre. Associate Members: James K. Clawson, Springfield; C. Rush McAdam, St. Louis; William P. Folck, Kansas City.

Diabetes—Harold K. Roberts, St. Louis, Chairman; Lucien W. Ide, St. Joseph. Associate Members: Wm. H. Olmstead, St. Louis; Harold H. Lurie, Springfield; Edward S. Jones, Harrisonville; Charles F. Wilson, Cape Girardeau.

Anesthesiology—W. W. Tillman, Jr., Springfield, Chairman; Edward O. Kraft, St. Louis. Associate Members: George R. Weeks, Cape Girardeau; Robert B. Dodd, St. Louis; Edwin E. Bowe, Jefferson City.

Control of Venereal Disease—Edwin M. Powell, Springfield, Chairman; T. E. McMillan, Kansas City. Associate Member: M. Richard Carlin, St. Louis.

Physical Medicine and Rehabilitation—Edward B. Shires, Kansas City, Chairman; F. D. Sundstrom, Springfield; Lester E. Wolcott, Columbia. Associate Members: John W. Deyton, St. Louis; Nicholas S. Pickard, Kansas City.

Civil Defense Disaster Medical Care—Carl D. Siegel, Sedalia, Chairman; John T. Crowe, Cape Girardeau; Carroll P. Hungate, Kansas City; Wm. F. Bell, Lee's Summit; John H. Walterscheid, Hannibal; Curtis H. Lohr, Clayton; R. Ned White, Springfield; George E. Thoma, St. Louis; George L. Watkins, Farmington; O. P. Hampton, St. Louis; J. S. Sanders, Jefferson City; John L. Mothershead, St. Joseph; Robert R. Donley, Monett.

Aging—Stanley S. Petersen, Springfield, Chairman; Rolla B. Wray, Nevada. Associate Members: Robert H. Tanner, Jefferson City; John A. Griffith, Kansas City; John W. Daake, St. Louis; J. H. Summers, Lebanon; Wm. C. Critchlow, Sikeston; Robert B. Bassett, St. Louis.

Radiology and Ionizing Radiation—Mark D. Eagleton, Clayton, Chairman; D. D. Anthony, Springfield. Associate Members: Wayne K. Tice, Independence; William E. Allen, St. Louis; Wayne A. Simril, Clayton.

Tuberculosis—Florence E. MacInnis, Kansas City, Chairman; Paul Murphy, St. Louis; H. M. Roberts, Kansas City; Joseph L. Lucido, St. Louis; Walter C. Gray, St. Louis; David N. Kerr, St. Louis; John W. Polk, Springfield; Sheldon B. Beecher, Poplar Bluff; Judson I. Chalkley, Columbia.

Study of Cardiac Disease—James G. Janney, St. Louis, Chairman; Earl L. Loyd, Jefferson City; William I. Park, Springfield, Wm. J. Shaw, Sr., Fayette; Jack M. Martt, Columbia; Robert S. Mosser, Independence; William J. Gillespie, St. Louis; Caryl A. Potter, St. Joseph; F. J. Biggs, Poplar Bluff; Joseph C. Edwards, St. Louis; J. Tenbrook King, Kansas City.

Rural Medical Service—B. J. Bass, Salem, Chairman; J. Marshall Jung, Illmo; James H. Sweiger, Maysville; K. S. Latham, California; H. F. Hoelscher, Warrenton; James E. Campbell, Macon; Charles A. Worley, Sweet Springs; A. J. Graves, Mount Vernon.

Laboratory Medicine—Vincent Perna, St. Louis, Chairman; William McPhee, Kansas City.

After determining that there was no further business to come before the House, the Speaker declared that the 1965 Annual Session was adjourned.

REGISTRATION AT THE 109TH ANNUAL SESSION

First Councilor District—29

Allen, S. Lloyd, Kansas City
Clark, C. L., Trenton
Conrad, Joseph, Chillicothe
Craig, R. O., St. Joseph
Cross, Albert D., Trenton
Curran, H. A., St. Joseph
Dixon, John R., Brookfield
Dowell, Donald M., Chillicothe
Dunshee, R. E., Maryville
Dwyer, R. D., Kansas City
Edwards, T. F., N. Kansas City
Fisher, Joseph L., St. Joseph
Forgrave, John R., St. Joseph
Fuson, Levi H., St. Joseph
Goldberg, I. E., Braymer
Horner, Glennon A., Marceline
Kuenzi, Donald C., Kansas City
Long, Forrest C., Savannah
Luckenbill, P. T., Plattsburg
McDonald, Wilbur P., St. Joseph
Mandler, George, Chillicothe
Martin, J. N., St. Joseph
Matteson, Frank B., Grant City
Parsons, Bernie, Albany
Riddell, Richard V., St. Joseph
Rost, William B., St. Joseph
Schertz, T. B., N. Kansas City
Vandiver, V. D., Chillicothe

Second Councilor District—18

Bach, Lysle M., Hannibal
Barnett, F. A., Paris
Buben, R. W., Kirksville
Campbell, James E., Macon
Davis, Landis Y., Canton
Fleming, Tom, Moberly
Foreman, Phillip B., Hannibal
Francka, W. F., Hannibal
Freeman, Spencer L., Kirksville
Hamlin, Wyeth, Hannibal
Harms, F. L., Salisbury
Huber, L. E., Moberly
Landau, Daniel B., Hannibal
Lanning, Robert J., Hannibal
Lewellen, Charles H., Louisiana
Middleton, John W., Louisiana
Rowlette, A. P., Moberly
Tarvydas, Francis, Edina

Third Councilor District—191

Allen, Henry C., St. Louis
Allen, Hollis N., St. Louis
Allen, Wm. E., St. Louis
Aufderheide, G. Russell, St. Louis
Barden, F. W., St. Louis
Bailey, W. H., St. Louis
Banton, M. Roman, St. Louis
Banton, William C., St. Louis
Bartlett, Robert W., St. Louis
Bartnick, Mitchel L., St. Louis
Baumgarten, W., St. Louis
Bawell, Malcolm B., St. Louis
Berg, Ralph, St. Louis
Bergman, Hugo F., St. Louis
Berry, John W., Clayton
Berwald, Irvin I., St. Louis
Bock, Lux H., St. Louis
Bowen, S. F., Jr., St. Louis
Bradley, Richard V., St. Louis
Brangle, Robert W., St. Louis
Brennan, G., St. Louis
Brennan, Robert A., St. Louis
Burford, C. E., St. Louis
Busch, Anthony K., St. Louis
Cacioppo, Joseph E., St. Louis
Campos, F. J., St. Louis
Cannon, Edward M., St. Louis
Clark, Clarence L., Creve Coeur
Cook, Ralph L., St. Louis
Cooper, T. J., Clayton
Costrino, John J., St. Louis
Costrino, Joseph A., St. Louis
Davis, E., St. Louis
Davis, Martin W., St. Louis
Deutch, Max, St. Louis
Dodd, Robert B., St. Louis
Donovan, W. T., St. Louis
Doyle, C. R., St. Louis
Drake, Truman G., St. Louis
Dunn, Robert E., St. Louis
Eades, Dee W., St. Louis
Eberle, John, St. Louis
Edwards, Joseph C., St. Louis
Ernst, Edwin C., St. Louis
Ernst, Edwin C., Sr., St. Louis
Falk, O. P. J., St. Louis
Feldman, David, St. Louis
Finnegan, Joseph V., St. Louis
Fitzgerald, Leo P., St. Louis
Fleishman, Alfred, St. Louis
Foster, Howard M., St. Louis
Franklin, Max S., St. Louis
Friedman, Paul L., St. Louis
Fries, Armand D., St. Louis
Funsch, Robert E., St. Louis
Furla, Gus J., Brentwood
Furlow, Leonard T., St. Louis
Geise, August, St. Louis
Gillespie, Wm., St. Louis
Gitt, Joseph, St. Louis
Gladney, John H., St. Louis
Glassberg, B. Y., St. Louis
Goldfarb, Alvin, St. Louis
Graneto, Joseph A., St. Louis
Griffith, John K., St. Louis
Gunn, Walter T., St. Louis
Haddock, James N., Webster Groves
Hagenbusch, O. E., St. Louis
Hall, Preston S., St. Louis
Hammond, John J., St. Louis
Hampton, Stanley F., St. Louis
Hanlon, C. Rollins, St. Louis
Harell, Alex, St. Louis
Hartwig, John A., St. Louis
Hawk, Bray, St. Louis
Hawkins, George L., Webster Groves
Headrick, John A., St. Louis
Hilbert, Paul H., St. Louis
Hobart, Carl, St. Louis
Hodges, F. J., St. Louis
Hofstatter, Leopold, St. Louis
Holt, Earl P., St. Louis
Holtz, Alan S., Kirkwood
Hulbert, Bernard, St. Louis
Hummel, William C., Richmond Heights
Johnstone, John, Jr., Kirkwood
Jones, Andrew B., St. Louis
Jones, Augustin, St. Louis
Jones, Otey S., St. Louis
Jost, Charles A., St. Louis
Karandjeff, A. D., St. Louis
Keller, Louis, Clayton
Kelley, Robert W., St. Louis
Kendig, John H., St. Louis
Kerr, David N., Clayton
Keyes, E. Lawrence, St. Louis
King, E. E., St. Louis
Kinsella, F. D., St. Louis
Kinsella, Ralph, St. Louis
Kleinschmidt, C. C., Clayton
Klenk, Charles L., St. Louis
Kneal, Ellsworth, St. Louis
Kopp, L. J., St. Louis
Lane, Daniel K., St. Louis
Lane, Clinton W., St. Louis
Lederman, Joseph, St. Louis
Levy, Jerome F., St. Louis
Link, A. J., St. Louis
Little, Monroe H., St. Louis
Lonergan, Warren M., St. Louis
Luten, Drew, Clayton
McAdam, C. Rush, St. Louis
Malles, A. Conrad, St. Louis
Mannis, Ben G., St. Louis
Max, Paul F., St. Louis
Melick, Wm. F., St. Louis
Merenda, Sam J., St. Louis
Michael, V. E., St. Louis
Miller, C. W., St. Louis
Mishkin, Marvin, St. Louis
Missey, W. C., St. Louis
Monat, Seymour, St. Louis
Moore, Alva, St. Louis
Mueller, C. E., St. Louis
Mueller, Robert, St. Louis
Muether, R. O., St. Louis
Murphy, James P., St. Louis
Neilson, Arthur W., St. Louis
Nester, C. A., St. Louis
Newman, Percy, St. Louis
Nicolai, Charles H., St. Louis
Norton, William H., St. Louis
Oakley, Margaret, St. Louis
Ohmoto, Masao, St. Louis
Olmsted, W. H., St. Louis
Oppenheimer, Henry E., Clayton
Orenstein, Joseph M., St. Louis
Parker, Thomas W., St. Louis
Peden, Joseph C., Jr., St. Louis
Perna, Vincent P., St. Louis
Pernoud, F. G., St. Louis
Pernoud, M. F., St. Louis
Potter, Reese H., St. Louis
Probstein, J. G., St. Louis
Pruett, Burchard S., St. Louis
Reed, Theresa G., St. Louis
Repetto, Albert, St. Louis
Rifkin, Shale M., St. Louis
Rosenfeld, Henry, St. Louis
Roth, John J., St. Louis
Ruhling, Rudy, St. Louis
Ryan, Robert E., St. Louis
Sauer, W. Nicholas, St. Louis
Schultz, E. R., St. Louis
Schwartz, Frederick O., St. Louis
Sciortino, John S., St. Louis
Scopelite, J. A., St. Louis
Scott, Elwin P., St. Louis
Seddon, John W., St. Louis
Sertl, John D., St. Louis
Sexton, Daniel L., St. Louis
Sherwin, Charles S., St. Louis
Schwartz, Melvin M., St. Louis
Signorelli, A. J., St. Louis
Simon, David L., St. Louis
Sims, William A., Jr., St. Louis
Skilling, David M., Jr., St. Louis
Stein, Leonard A., St. Louis
Stewart, John W., St. Louis
Stolar, Jacob, St. Louis
Strauss, Arthur E., St. Louis
Stutsman, A. C., St. Louis
Sullivan, Clement, St. Louis
Thompson, J. M., St. Louis
Tibbs, William A., Clayton
Tichenor, R. W., Sappington
Titterington, P. F., St. Louis
Tjoflat, Oliver E., St. Louis
Ungvari, Joseph C., St. Louis
Vaughan, J. Russell, Clayton
Walton, Franklin E., St. Louis
Weinel, Francis G., Webster Groves
Wennerman, Sam F., St. Louis
Wentzel, L. R., St. Louis
Weyerich, L. F., St. Louis
Wiegand, Herbert C., St. Louis
Williams, Ray D., St. Louis
Willman, V. L., St. Louis
Witt, Clyde M., St. Louis
Wotawa, William J., St. Louis
Zillgitt, George H., St. Louis

Fourth Councilor District—80

Bagby, J. W., Clayton
Beam, Sim F., St. Louis
Boles, C. Reed, Clayton
Bowersox, W. A., Pacific
Bozzo, F. J., Washington
Cadbury, Jane B., Chesterfield
Canty, Eugene J., St. Charles
Coates, Thomas, St. Louis
Cowdry, E. V., Jr., Clayton
Creech, J. C., Troy
Crider, Russell, St. Charles
Damron, Edward O., Elsberry
Diehr, Maurice A., St. Louis
Ecker, D. B., Pacific
Eller, C. Howe, Clayton
Emerson, Reynolds L., Brentwood
Fairshter, Alex E., St. Louis
Fallet, Charles, De Soto
Fletes, James W., St. Louis
Freiheit, H. J., St. Louis
Goodman, Nathaniel, St. Louis
Hall, Eugene W., Ferguson
Hampton, Oscar P., Jr., St. Louis
Hoelscher, Harold, Warrenton
Hogancamp, Glenn E., Ballwin
Holscher, E. C., St. Louis
Howe, Louis F., Brentwood
Hughes, Robert G., St. Louis
Izmirlian, G., Webster Groves
Johnson, Grover C., Marthasville
Jones, Victor, Brentwood
Jotte, Richard F., Frontenac
Judge, Walter T., Crystal City
Kimelman, N., St. Louis
Koch, Robert E., St. Louis
Kessel, Arthur W., St. Louis
Kopp, Jules, St. Louis
Linsenmeyer, Charles, St. Charles
Lord, Richard E., St. Louis
Magness, Guy N., University City
Mayer, Robert A., St. Louis
Mayfield, J., Crystal City
Meador, James, Clayton
Merz, J. J., St. Louis
Miller, Charles, Jr., Kirkwood
Muench, L. O., Farmington
Muenster, Vincent P., St. Charles
Nakada, J. R., Clayton
O'Connor, Robert J., Florissant
Phillips, Hanford, St. Louis
Poggemeier, William, St. Charles
Ragland, John F., Ballwin
Reese, A. Victor, Glendale
Richardson, George A., Union
Richardson, William R., Union
Roberts, H. K., Clayton
Roblee, Melvin A., St. Louis
Rother, Paul H., St. Charles
Rubin, Robert, Ferguson
Schattyn, Martyn, St. Louis
Schmidt, Charles A., Gerald
Senn, E. J., Herculaneum
Shaw, Carvel T., Hermann
Shea, James G., Gerald
Sisk, James, Clayton
Suba, Antonio, Clayton
Susman, I. C., St. Louis
Sutter, Richard A., St. Louis
Tashma, S., St. Louis
Trueblood, A. C., Jr., Kirkwood
Vatterott, Paul B., Creve Coeur
Vinyard, Paul, St. Louis
Vitale, Anthony J., St. Louis
Vitale, N. S., St. Louis
Walther, Roy A., Jr., St. Louis
Weitman, Maxilian, St. Louis
Whitener, Miles C., St. Louis
Whitener, Paul R., St. Ann
Wipfler, Earl J., Jr., St. Charles
Yoskit, Henry, Festus

Fifth Councilor District—57

Allen, W. C., Columbia
Asel, Norman W., Columbia
Baker, A. S., Columbia
Baker, James M., Columbia
Belden, E. A., Jefferson City
Bloom, William A., Fayette
Bregant, Robert, Jefferson City
Bruner, C. R., Columbia
Cope, J. C., Columbia
Davis, Leonard L., Jr., Mexico
Durst, Henry, Fulton
Dwyer, Thomas L., Mexico
Ekern, H. Peter, Mexico
Exon, C. S., Jefferson City
Garner, L. M., Jefferson City
Gordon, James S., Jefferson City
Hardwicke, H. M., Jefferson City
Jolly, William H., Mexico
Jolly, Ben N., Mexico
Kallenbach, Glen P., Mexico
Kanagawa, H., Jefferson City
Kauffman, Ruth, Versailles
Keown, Kenneth, Columbia
Landor, John H., Columbia
Lankford, H. D., Mexico
Laura, Walters, Columbia
Leslie, J. T., Jr., Jefferson City
Lodwick, G. S., Columbia
Loyd, Earl L., Jefferson City
Matthews, John, Jefferson City
Mayer, William D., Columbia
Meinershagen, C. W., Jefferson City
Miller, Leroy J., Columbia
Moranville, B. A., Columbia
Neal, M. Pinson, Columbia
Ray, Thorpe, Columbia
Ridings, G. R., Columbia
Russell, J. P., Jefferson City
Schewe, E. J., Jr., Columbia
Shaw, William J., Fayette
Shull, G. Donald, Jefferson City
Spurgeon, Milo J., Columbia
Stephan, August P., Jefferson City
Stephenson, Hugh E., Jr., Columbia
Steward, William J., Columbia
Stuart, Byron M., Boonville
Summers, Joseph S., Jefferson City
Sydow, Henry, Fulton
Tanner, Robert H., Jefferson City
Tellez, Edward R., Fulton
Wolcott, Lester, Columbia
Walters, John H., Columbia
Washburn, J. L., Versailles
Watts, Byron E., Jefferson City
Wilson, Vernon, Columbia
Winn, G. W., Boonville
Ziegler, Anthony, Vandalia

Sixth Councilor District—26

Aiken, George A., Marshall
Barger, O. B., Harrisonville
Bradshaw, W. D., Clinton
Bardy, H. S., Concordia
Eklund, A. W., Pleasant Hill
Folkner, A. L., Warrensburg
Gentry, M. L., Warsaw
Giesler, Don H., Osceola
Gonser, Karl B., Sedalia
Haynes, Robert C., Marshall
Jones, Edna M., Clinton
Jones, Edward S., Harrisonville
Kelling, Jordan, Waverly
King, Richard H., Clinton
LaHue, William C., Lexington
Lawrence, John R., Marshall
Lederer, C. M., Warrensburg
McCorkle, E. Lee, Marshall
Madison, Waite H., Kansas City
Maddox, Albert R., Sedalia
Pascoe, James J., Nevada
Riley, Charles T., Richmond
Siegel, Carl D., Sedalia
Stewart, W. K., El Dorado Springs
Watson, Cecil L., Marshall
Wray, Rolla B., Nevada

Seventh Councilor District—40

Andrews, Berneil, Kansas City
Barelli, Pat A., Kansas City
Barnard, John L., Kansas City
Benoit, Hector W., Jr., Kansas City
Bridgens, James G., Kansas City
Caldwell, John K., Kansas City
Campbell, John G., Kansas City
Elam, J. O., Kansas City
Eubank, D. M., Raytown
Fritzlen, Thomas J., Kansas City
Gottsch, Joseph C., Kansas City
Griffith, John A., Kansas City
Growdon, John, Kansas City
Hibbard, Blaine Z., Kansas City
Hollweg, Kenneth C., Kansas City
Hunt, Claude J., Kansas City
Jaeger, J. N., Jackson
Kiene, Richard H., Kansas City
Kranson, Seymour J., Independence
Lapi, Angelo, Kansas City
Lytton, George, Kansas City
McCanse, Andrew, Kansas City
McCoy, Frederick J., Kansas City
McVay, James R., Kansas City
McVay, James R., Jr., Kansas City
MacInnis, Florence E., Kansas City
Masucci, J. M., Kansas City
Mixson, William C., Kansas City
Nigro, D. M., Kansas City
O'Malley, J. F., Kansas City
Rader, Ada B., Kansas City
Robinson, G. Wilse, Kansas City
Rubin, Sidney, Kansas City
Slickman, R. A., Kansas City
Smith, O. T., Kansas City
Statland, Harry, Kansas City
Stelmach, Walter J., Kansas City
Stockwell, A. L., Kansas City
Wheeler, Charles, Kansas City
Willoughby, James W., Kansas City

Eighth Councilor District—55

Allen, J. H., Springfield
Auner, Cecil R., Springfield
Bareis, R. J., Marshfield
Bonebrake, M.D., Springfield
Brasher, C. A., Mt. Vernon
Brown, Lyman D., Springfield
Busiek, Urban J., Springfield
Callaway, Guy, Springfield
Cohle, Richard R., Carthage
Dillard, Erin M., Springfield
Donley, R. R., Monett
Farthing, Gene W., Springfield
Ferguson, John P., Springfield
Ferrell, T. E., Springfield
Glenn, E. E., Forsyth
Glover, Kenneth, Mt. Vernon
Griffin, Evelyn, Buffalo
Griffin, O. A., Buffalo
Hall, Durward T., Springfield
Hamilton, William P., Aurora
Hanan, E. B., Springfield
H'Doubler, F. T., Jr., Springfield
Holtzman, S., Joplin
Jeans, Virgil E., Joplin
Johnson, William F., Springfield
Kenney, Roy E., Neosho
Knabb, Arthur, Springfield
Knabb, Kenneth E., Springfield
Kolze, V. W., Springfield
Lockhart, Charles E., Springfield
McAlhany, Howard, Springfield
McCallum, A. J., Aurora
McCraw, Doyle, Bolivar
McNew, W. T., Carthage
Macdonnell, C. R., Marshfield
Macdonnell, T. M., Marshfield
Maddox, John D., Joplin
Maher, Robert W., Springfield
Moseley, F. Thomas, Springfield
Napper, Marvin L., Springfield
Park, William I., Springfield
Patterson, Grover S., Carthage
Peterson, Stanley S., Springfield
Polk, John W., Springfield
Powell, Edwin M., Springfield
Roper, S. D., Ozark
Schulte, G. A., Joplin
Schweitzer, F. C., Springfield
Scorse, S. W., Joplin
Siceluff, J. G., Springfield
Snead, William H., Springfield
Tillman, Walter W., Jr., Springfield
Turner, Glenn O., Springfield
Yancey, Daniel L., Springfield
Zimmerman, Joe A., Kennett

Ninth Councilor District—14

Bass, B. J., Salem
Burns, T. J., Houston
Cooper, C. W., Thayer
Hammler, Christana V., St. James
Hasek, James A., Cabool
Holley, D. B., Camdenton
Miller, Harold, Willow Springs
Russell, Barbara, Rolla
Stricker, E. A., St. James
Summers, J. H., Lebanon
Underwood, M. K., Rolla
Wall, Joe A., Houston
Young, Robert B., Rolla

Tenth Councilor District—37

Ashley, H. V., Cape Girardeau
Ashley, H. V., Sr., Cape Girardeau
Beecher, S. B., Poplar Bluff
Bull, Ben M., Ironton
Burcham, Tom R., Farmington
Burford, E. K., Cape Girardeau
Campbell, E. D., Cape Girardeau
Carron, O. A., Perryville
Cook, O. W., Caruthersville
Crowe, John T., Cape Girardeau
Ellis, B. E., Gideon
English, W. D., Cardwell
Estes, Albert M., Cape Girardeau
Fischer, Theodore, Altenburg
Frazier, R. L., Charleston
Grossman, M., Fredericktown
Hansbrough, E. T., Poplar Bluff
Huckstep, R. A., Farmington
Jung, J. M., Illmo
Kasten, M. C., Cape Girardeau
Lovinggood, T. A., Cape Girardeau
Lutkewitte, J. F., Ste. Genevieve
McDermott, A. E., Perryville
McGinty, Charles P., Cape Girardeau
McPheeters, J. W., Sr., Poplar Bluff
Menne, Marvin C., Ironton
Michaelis, Charles E., Fredericktown
Peck, C. R., Kennett
Rapp, Harold B., Cape Girardeau

Ritter, Raymond A., Cape Girardeau
Seabaugh, L. R., Cape Girardeau
Seabaugh, Wm. O. L., Cape Girardeau
Shirey, A. G., Hayti
Shoss, Milton, Cape Girardeau
Spence, E. L., Kennett
Weeks, G. R., Cape Girardeau
Wilson, Charles F., Cape Girardeau

Guest Physicians—35

Ayata, S. M., University City
Banelari, B., Columbia
Beall, Arthur C., Jr., Houston, Texas
Benson, Donald W., Baltimore, Maryland
Bradford, William L., Rochester, N. Y.
Brick, Irving B., Washington, D. C.
Bynum, W. R., Columbia
Cook, Robert J., Brentwood
Crawford, Houston, Texas
DeWeese, M. S., Columbia
Eblen, Kenneth M., Henderson, Ky.
El-Etr, Adel, Clayton
Fielding, J. W., New York, N. Y.
Fowler, Noble O., Cincinnati, Ohio
Frank, Howard A., Boston, Mass.
Gary, Roland K., Jefferson City
Green, Maurice, St. Louis
Haughton, T. J., Regina, Saskatchewan, Canada
Higginbotham, Hugh B., Overland
Kozdereli, Erol, Mt. Vernon
Landhuis, Leo R., Columbia
McCurry, J. H., Arkansas
McLean, Harry A., St. Louis
Manigan, T. P., Memphis, Tenn.
Michaelis, B. A., Fredericktown
Moore, Lawrence W., St. Louis
Payne, Gerald H., Columbia
Edgar, Poth, Galveston, Texas
Proud, G. D., Kansas City, Kansas
Rayner, Richard C., Columbia
Smith, Jackson A., Hines, Ill.
Williams, Jerome, St. Louis
Venk, G., St. Louis
Waterfield, Jim, Springfield
Farrell, William J., Evergreen Park, Ill.

There were 547 members registered, 35 guest physicians, 26 students, 13 residents and interns, 213 exhibitors, 214 medical technologists, 184 Woman's Auxiliary, 70 guests, making a total registration of 1,302.

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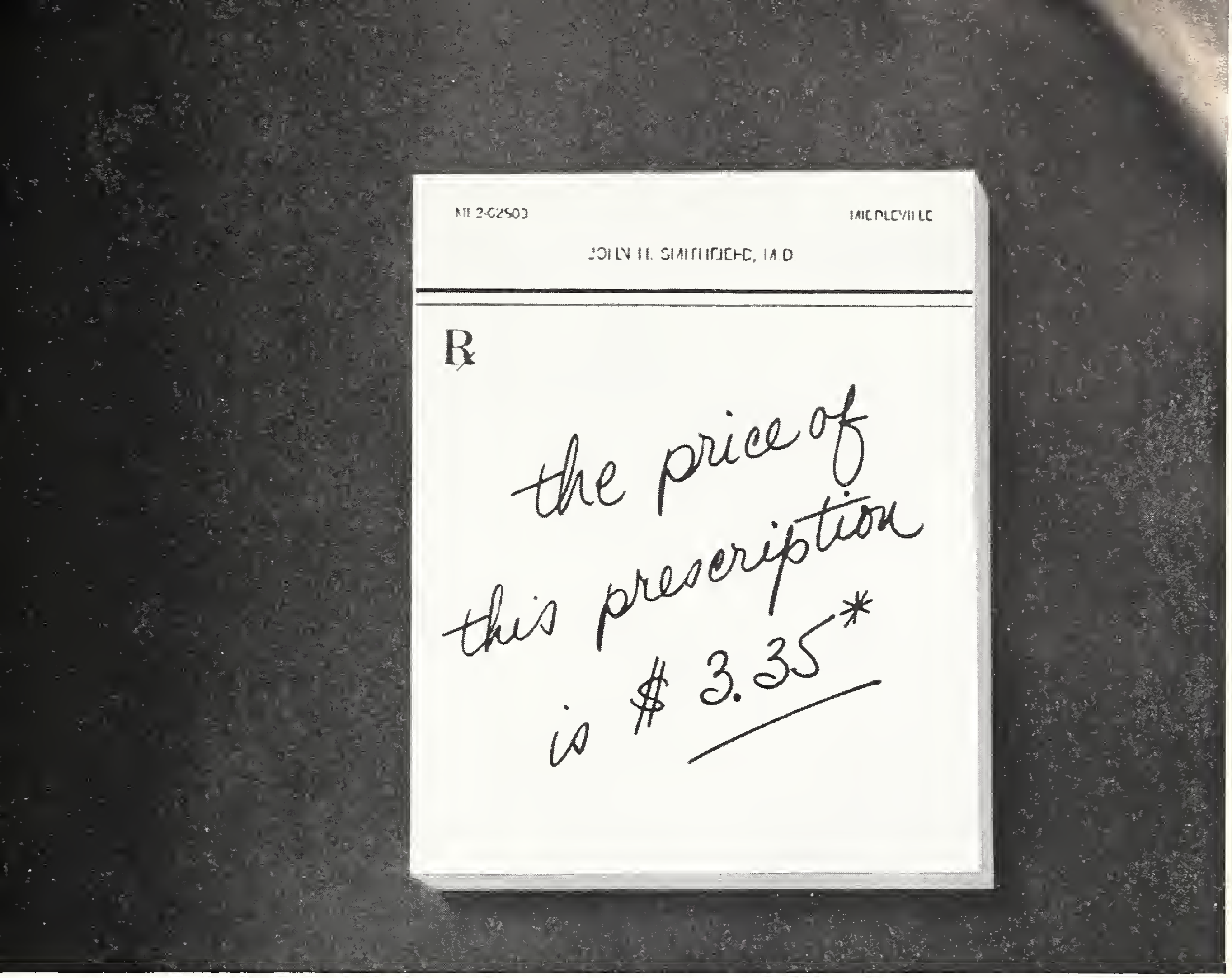

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*Average prescription price, 1963. National Prescription Audit, R.A. Gosselin, Dedham, Mass.

Missouri State Medical Foundation

Minutes of the Annual Meeting
Hotel Chase, St. Louis
April 5, 1965

The meeting was called to order by Ben Bull, M.D., President, at 5:30 p.m. A quorum was declared present. Dr. Bull stated that the minutes of the 1964 Annual Meeting, which followed the March 9 Session of the MSMA House of Delegates, were published in the July 1964 issue of Missouri Medicine. Dr. Bull called for any additions or deletions to the minutes. There being none, the minutes of the 1964 meeting were declared approved as published. He also pointed out that the minutes of the Board of Trustees meeting of the Foundation following the 1964 Annual Meeting were also published in the July 1964 issue of Missouri Medicine.

Dr. Bull reported that a letter to all members of the MSMA over the signature of the President of the Foundation, soliciting donations to the Foundation was mailed in early December 1964. He stated that the results of this mailing were somewhat disappointing. Many doctors apparently feel that they are supporting the Foundation sufficiently through the MSMA $7.50 per year assessment. Dr. Bull said the Council of the MSMA has recommended the continuation of this assessment for the years 1966, 1967 and 1968 and that the House of Delegates approved the Council's recommendation at the Monday afternoon session. Dr. Bull directed attention to the financial status of the Foundation as of February 1, 1965. A mimeographed copy of the statement had previously been passed out to those in attendance and reads as follows:

FEBRUARY 1, 1964 TO FEBRUARY 1, 1965

INCOME*

Contributions

1964 Assessments MSMA Membership	$24,974.83
Special Grants	
Knight Drug	1,000.00
C. V. Mosby	200.00
Foster Drug	75.00
Miller Medical Arts Pharmacy	50.00
Longs Drug	100.00
Thomas Standard Drug	50.00
Professional Management Midwest	50.00
Additional Special Contribution from Miss Nellie Evans in memory of her father, Dr. A. L. Evans (Total now $4,500)	1,000.00
Donations from Doctor Members	3,230.00
Contribution of MSMA Woman's Auxiliary	
Missouri State Loan Fund (Cash)	4,031.32
Loans Outstanding	8,050.00
Individual Gifts—Non Medical Donors	200.00
Donations From County Medical Societies	300.00
Tribute Donations, memorials, etc.	205.00
Donations From Polio Immunization Campaigns:	
Boone County	2,000.00
Cass County	2,265.00
St. Clair County	980.00
Vernon County	500.00
Total Contributions	$49,261.15
Interest Paid on Loans Made to Students	675.88
Total Income	$49,937.03

Loans

Loans Granted to Students (59)	$26,825.00
Loans Previously Granted by Woman's Auxiliary	8,050.00
Repayments on Loans (Including Auxiliary) (Not including interest)	5,707.60

Loan Recapitulation

Total Operations September, 1960 to February 1, 1965

Income to Date (including interest and Auxiliary Loan Fund)		$167,096.12
Loans Made to Students to Date (Including Auxiliary)	$152,195.00	
(Less) Loan Repayments (Including Auxiliary)	7,332.60	
Loans Outstanding	$144,862.40	144,862.40
Balance on Hand		$ 22,233.72
Total Number of Loans Granted	316 + 14 (Auxiliary) = 330	
Number of Different Students Receiving Loans	124 + 10 (Auxiliary) = 134	

Dr. Bull reported that since February 1, 1965 some additional donations had been given the Foundation, the major portion of which was a gift of $7,500 from the St. Louis Charities, Inc. This gift represents a part of the surplus funds from the oral polio vaccine program in the City of St. Louis and St. Louis County in 1963 and represents substantial assistance to the Foundation. Loans made to medical students since February 1 number five in the amount of $2,300.

Dr. Bull stated that at the Foundation Annual Meeting in 1964 Dr. Furlow reported that the Foundation was to be a recipient of $5,000 in the near future from a will which was now being probated in St. Louis. There has been a contest of the will and it is still under litigation.

Dr. Bull called for the next order of business which was the election of two members to the Board of Trustees, one member for a term of five years to replace Dr. R. O. Muether whose term expires and the other member for a term of four years to fill the unexpired term of Dr. Paul Whitener who becomes ex-officio member of the Board as President of MSMA.

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* Figures do not include income from 1965 MSMA Assessments.

Dr. Bull then requested the report of the Nominating Committee composed of Drs. Doyle McCraw, chairman, W. D. English and Avery Rowlette. The name of Dr. Leonard Furlow, St. Louis, was presented for the five year term and the name of Dr. R. O. Muether of St. Louis for the four year term. Dr. Bull called for additional nominations from the floor. There being none, a motion was made, seconded and passed that the nominations cease and Drs. Furlow and Muether be elected by acclamation.

Dr. Bull then called for any other business to come before the meeting. There was none. He then announced there would be a short meeting of the Board of Trustees immediately following the adjournment of the Annual Meeting.

The meeting was adjourned at 6:00 p.m.

Minutes of the MSMF Board of Trustees Meeting
Hotel Chase, St. Louis
April 5, 1965

The meeting of the Board of Trustees was called to order by Ben Bull, M.D., President, in the Chase Club, Hotel Chase, immediately following the adjournment of the Annual Meeting of the MSMF. Present were: Drs. Ben Bull, Ironton; Leonard Furlow, St. Louis; W. W. Tillman, Jr., Springfield; Paul Whitener, St. Louis County and Mr. Ray McIntyre, St. Louis.

Dr. Bull explained the purpose of this meeting was for the election of officers. He requested that Dr. Paul Whitener, MSMA President, assume the chair for this purpose. Dr. Whitener called for nominations for the office of President. The name of Dr. Bull was placed in nomination. No further nominations were offered and Dr. Bull was unanimously elected.

Dr. Bull again assumed the chair and called for nominations for the office of Vice-President. The name of Dr. W. W. Tillman, Jr., was placed in nomination. No other nominees were offered and Dr. Tillman was unanimously elected.

Nominations were invited for Secretary-Treasurer. The name of Dr. C. R. Doyle was presented. There being no additional nominations, Dr. Doyle was unanimously elected.

A motion was made, seconded and passed that the following Committee of the Board be authorized to make loans to medical students, residents of Missouri, in the name of the MSMF, using funds of the Foundation for that purpose: Drs. C. R. Doyle, Leonard T. Furlow, and R. O. Muether, all of St. Louis. This Committee was also authorized to raise the limit per semester for a student loan from the present $500.00 maximum to $750.00. This was done primarily in view of the tuition costs per semester in medical schools not receiving state support.

Mr. Ray McIntyre was reappointed Assistant Secretary to assist in the administration of the Foundation's program.

There being no further business, the Board was declared adjourned at 6:15 p.m.

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NOTE

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HYDROCHLORIDE
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MSMA Officers and Committees
1965-66

A full list of Association officers, AMA Delegates, Councilors and Executive Office Staff is published on the title page (opposite) in every issue of Missouri Medicine. For this reason the information is not repeated here.

COMMITTEES

Scientific and Postgraduate Work—John I. Matthews, Jefferson City, Chairman (1966); Peter G. Danis, St. Louis (1967); J. F. McDonnell, Kansas City (1966); M. Pinson Neal, Columbia (1968); Richard W. Yore, St. Louis (1967). **Associate Members**—Richard O. Craig, St. Joseph; Paul B. Anderson, Neosho; Joe L. Spears, Cabool; Paul H. Rother, St. Charles; Charles P. McGinty, Cape Girardeau; R. A. Slickman, Kansas City; Edward D. Kinsella, St. Louis; Roy W. Pearse, Jr., Nevada; T. J. Fischer, Hannibal.

Defense—W. W. Gist, Kansas City, Chairman (1968); Wilbur P. McDonald, St. Joseph (1967); Harold W. Miller, Willow Springs (1967); Max S. Franklin, St. Louis (1966); Roland S. Kieffer, St. Louis (1968).

Medical Education and Hospitals—William A. Knight, Jr., St. Louis, Chairman (1968); Vernon E. Wilson, Columbia (1967); Carl E. Lischer, St. Louis (1967); Ralph Perry, Kansas City (1966); Virgil Jeans, Joplin (1968). **Associate Member**—Wyeth Hamlin, Hannibal.

Cancer—John E. Lamy, Sedalia, Chairman (1967); E. J. Schewe, Columbia (1967); Joseph L. Fisher, St. Joseph (1966); J. Martyn Schattyn, St. Louis (1968); James R. McVay, Jr., Kansas City (1968). **Associate Members**—Harvey R. Butcher, Jr., St. Louis; Fred B. Coller, Springfield; G. Neil Berry, Kansas City.

Medical Economics—Martin P. Hunter, Kansas City, Chairman (1966); Rae W. Froelich, Lebanon (1967); G. W. Winn, Boonville (1968); Herbert C. Wiegand, St. Louis (1968). **Associate Members**—Kenneth E. Knabb, Springfield; Donald J. Giesler, Osceola; Chester L. Clark, Trenton; C. O. Vermillion, St. Louis; Charles Miller, Jr., Kirkwood.

Mental Health—Henry V. Guhleman, Jefferson City, Chairman; George W. Forman, St. Joseph; James N. Haddock, St. Louis; Robert D. Brookes, St. Louis; D. R. Edwards, Sedalia; William F. Clary, Springfield; Paul L. Barone, Nevada; Edward T. Auer, St. Louis; Robert S. Terrill, Kansas City; Joseph B. Kendis, St. Louis (1966).

Maternal Welfare—A. C. Trueblood, Clayton, Chairman (1967); James E. Keeler, Kansas City (1967); Irwin T. Craig, Joplin (1966); H. C. Willumsen, St. Joseph (1968); William B. See, Columbia (1968). **Associate Members**—C. G. Staufacher, Sedalia; Edward M. Grim, Kirksville; MacDonald Bonebrake, Springfield; E. E. Wadlow, St. Joseph; Paul E. Kratz, Cape Girardeau; Eugene G. Hamilton, St. Louis; Lyman D. Brown, Springfield; Robert S. Brown, Kansas City; Seymour Monat, St. Louis; Leonard A. Wall, Kansas City.

Infant and Child Care—James A. Kinder, Cape Girardeau, Chairman; E. J. Schwartz, Springfield; James K. Mann, Hannibal; H. E. Petersen, St. Joseph; R. J. LaDriere, St. Louis; Guy N. Magness, University City; Ray B. Lewis, Columbia; James J. Pascoe, Nevada; Jack N. Wiles, West Plains; Gerald E. Hughes, Kansas City. **Associate Members**—C. Read Boles, Clayton; Ben H. Koon, Bolivar; Ernest L. Glasscock, Kansas City (1966).

Constitution and By-Laws—W. A. Bloom, Fayette, Chairman (1966); Donald M. Dowell, Chillicothe (1967); R. O. Muether, St. Louis (1967); Kenneth C. Hollweg, Kansas City (1968); James R. Meador, Clayton (1968).

Trauma—Richard E. Lord, St. Louis, Chairman (1968); Glenn McElroy, Columbia (1967); Wilbur P. McDonald, St. Joseph (1966); Thomas G. Otto, Cape Girardeau (1966); Paul W. Meyer, Kansas City (1968). **Associate Members**—Howard J. McAlhaney, Springfield; Carl M. Peterson, Kansas City; Otis E. James, Kansas City; James O. Lottes, St. Louis; L. P. Hetlage, Troy.

Eye Health—Flavius G. Pernoud, St. Louis, Chairman (1967); Paul M. Beck, St. Joseph (1967); John A. Buesseler, Columbia (1967); Paul G. Wolff, Cape Girardeau (1966); Dick H. Underwood, Kansas City (1968). **Associate Members**—John R. Rufe, Kansas City; S. Albert Hanser, St. Louis; D. E. Eggleston, Macon; John D. Maddox, Joplin; George Mandler, Chillicothe; James H. Bryan, Clayton; Bill G. Prater, Springfield.

Laboratory Medicine—Vincent Perna, St. Louis, Chairman (1968); James G. Bridgens, Independence (1967); William McPhee, Kansas City (1968); David F. Gorelick, Springfield (1966); T. J. Cooper, St. Louis (1966).

Industrial Health—Douglas A. Ries, St. Louis, Chairman (1966); Paul J. Centner, Kansas City (1967); William L. Macon, St. Louis (1967); Van W. Taylor, Bonne Terre (1968); Richard A. Sutter, University City (1966). **Associate Members**—James K. Clawson, Springfield; C. Ruch McAdam, St. Louis; William P. Folck, Kansas City.

Diabetes—Harold K. Roberts, St. Louis, Chairman (1966); H. E. Oppenheimer, Clayton (1966); Thomas W. Burns, Columbia (1967); John K. Caldwell, Kansas City (1967); Lucien W. Ide, St. Joseph (1968). **Associate Members**—William H. Olmstead, St. Louis; Harold H. Lurie, Springfield; Edward S. Jones, Harrisonville; Charles F. Wilson, Cape Girardeau.

Anesthesiology—W. W. Tillman, Jr., Springfield, Chairman (1966); E. Helen Hash, Kansas City (1967); Kenneth K. Keown, Columbia (1967); Carl K. Ness, St. Joseph (1966); Edward O. Kraft, St. Louis (1968). **Associate Members**—George R. Weeks, Cape Girardeau; Robert B. Dodd, St. Louis; Edwin E. Bowe, Jefferson City.

Control of Venereal Disease—Edwin M. Powell, Springfield, Chairman (1968); A. E. Belden, Jefferson City (1967); A. W. Neilson, St. Louis (1967); Robert B. Bristow, St. Joseph (1966); T. E. McMillan, Kansas City (1968). **Associate Member**—M. Richard Carlin, St. Louis.

Physical Medicine and Rehabilitation—Edward B. Shires, Kansas City, Chairman (1967); Earl P. Holt, St. Louis (1967); Robert H. Fitzgerald, Independence (1966); F. D. Sundstrom, Springfield (1968); Lester E. Wolcott, Columbia (1968). **Associate Members**—John W. Deyton, St. Louis; Nicholas S. Pickard, Kansas City.

Disaster Medical Care and National Defense—Carl D. Siegel, Sedalia, Chairman; John T. Crowe, Cape Girardeau; Carroll P. Hungate, Kansas City; William F. Bell, Lee's Summit; John H. Walterscheid, Hannibal; Curtis H. Lohr, Clayton; R. Ned White, Springfield; George E. Thoma, St. Louis; George L. Watkins, Farmington; O. P. Hampton, St. Louis; J. S. Sanders, Jefferson City; John L. Mothershead, St. Joseph; Robert R. Donley, Monett (1966).

Aging—Stanley S. Peterson, Springfield, Chairman (1967); Robert C. Kingsland, Clayton (1967); Ralph Perry, Kansas City (1966); C. Thorpe Ray, Columbia (1966); Rolla B. Wray, Nevada (1968). **Associate Members**—Robert H. Tanner, Jefferson City; John A. Griffith, Kansas City; John W. Daake, St. Louis; J. H. Summers, Lebanon; William C. Critchlow, Sikeston; Robert B. Bassett, St. Louis.

Radiology and Ionizing Radiation—Mark D. Eagleton, Clayton, Chairman (1968); Gwilym S. Lodwick, Columbia (1967); J. Stewart Whitmore, Kansas City (1967); James S. Summers, Jefferson City (1966); D. D. Anthony, Springfield (1968). **Associate Members**—Wayne K. Tice, Independence; William E. Allen, St. Louis.

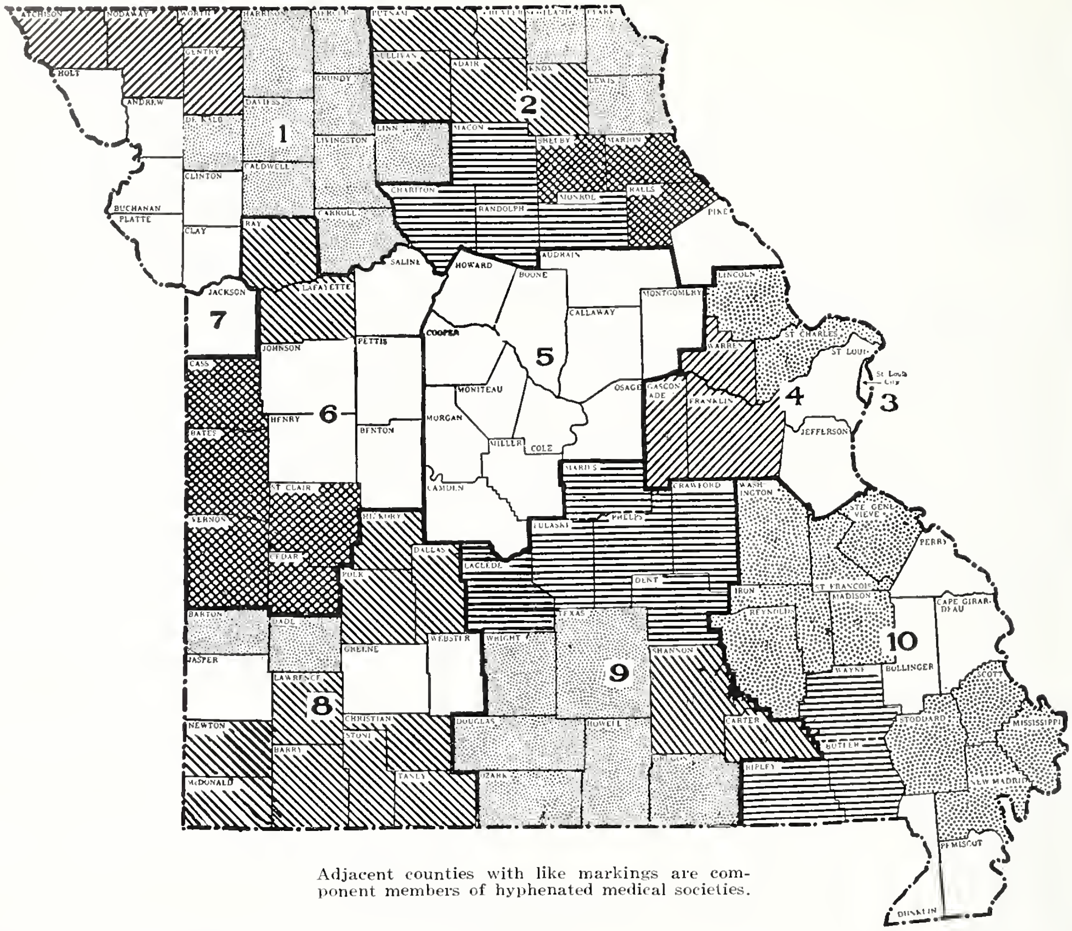
Tuberculosis—Florence E. MacInnis, Kansas City, Chairman; Paul Murphy, St. Louis; H. M. Roberts, Kansas City; Joseph L. Lucido, St. Louis; Walter C. Gray, St. Louis; David N. Kerr, St. Louis; John W. Polk, Springfield; Sheldon B. Beecher, Poplar Bluff; Judson I. Chalkley, Columbia (1966).

Study of Cardiac Disease—James G. Janney, St. Louis, Chairman; Earl L. Loyd, Jefferson City; William I. Park, Springfield; Wm. J. Shaw, Sr., Fayette; Jack M. Martt, Columbia; Robert S. Mosser, Independence; William J. Gillespie, St. Louis; Caryl A. Potter, St. Joseph; F. J. Biggs, Poplar Bluff; Joseph C. Edwards, St. Louis; J. Tenbrook King, Kansas City (1966).

Rural Medical Service—B. J. Bass, Salem, Chairman; J. Marshall Jung, Illmo; James H. Sweiger, Maysville; K. S. Latham, California; H. F. Hoelscher, Warrenton; James E. Campbell, Macon; Charles A. Worley, Sweet Springs; A. J. Graves, Mount Vernon (1966).

Public Service—David N. Kerr, St. Louis, Chairman; Paul R. Whitener, St. Louis; Byron M. Stuart, Boonville; Armand E. Brodeur, St. Louis; Fred L. Wommack, Crane (1966).

Councilor Districts and Counties in Each District



Adjacent counties with like markings are component members of hyphenated medical societies.

DISTRICT	COUNCILOR	COUNTIES
First	**Joseph L. Fisher, M.D.** St. Joseph	Andrew, Atchison, Buchanan, Caldwell, Carroll, Clay, Clinton, Daviess, De Kalb, Gentry, Grundy, Harrison, Holt, Linn, Livingston, Mercer, Nodaway, Platte and Worth
Second	**Lysle M. Bach, M.D.** Hannibal	Adair, Chariton, Clark, Knox, Lewis, Macon, Marion, Monroe, Pike, Putnam, Ralls, Randolph, Schuyler, Scotland, Shelby and Sullivan
Third	**David N. Kerr, M.D.** (Vice Chairman) St. Louis	St. Louis (City)
Fourth	**Robert A. Mayer, M.D.** Clayton	Franklin, Gasconade, Jefferson, Lincoln, St. Charles, St. Louis (County) and Warren.
Fifth	**James C. Cope, M.D.** Columbia	Audrain, Boone, Callaway, Camden,* Cole, Cooper, Howard, Miller, Moniteau, Montgomery, Morgan and Osage*
Sixth	**Rolla B. Wray, M.D.** Nevada	Bates, Benton, Cass, Cedar, Henry, Johnson, Lafayette, Pettis, Ray, St. Clair, Saline and Vernon
Seventh	**Hector W. Benoit, Jr., M.D.** (Chairman) Kansas City	Jackson
Eighth	**Doyle C. McCraw, M.D.** Bolivar	Barry, Barton, Christian, Dade, Dallas, Greene, Hickory, Jasper, Lawrence, McDonald, Newton, Polk, Stone, Taney and Webster
Ninth	**E. A. Stricker, M.D.** St. James	Carter, Crawford, Dent, Douglas, Howell, Laclede, Maries, Oregon, Ozark, Phelps, Pulaski, Shannon, Texas and Wright
Tenth	**W. D. English, M.D.** Cardwell	Bollinger,* Butler, Cape Girardeau, Dunklin, Iron, Madison, Mississippi, New Madrid, Pemiscot, Perry, Reynolds, Ripley, St. Francois, Ste. Genevieve, Scott, Stoddard, Washington and Wayne

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* Counties with no medical organization.

Component Societies in Affiliation With the Missouri State Medical Association

COUNTY	DISTRICT	PRESIDENT	ADDRESS	SECRETARY	ADDRESS
Andrew	1	V. R. Wilson	Rosendale	Warren C. Baker	Savannah
Audrain	5	Ernest S. Gantt	Mexico	Thomas L. Dwyer	Mexico
Barton-Dade	8	Herbert M. Arnold	Lamar	Alvin R. Cain	Lamar
Benton	6			James A. Logan	Warsaw
Boone	5	John H. Walters	Columbia	E. J. Schewe	Columbia
Buchanan	1	Herbert C. Senne	St. Joseph	Berwyn H. Moen	St. Joseph
Butler-Wayne-Ripley	10	Fred Caldwell	Poplar Bluff	Ernest M. Tapp	Poplar Bluff
Callaway	5	William J. Cremer	Fulton	Katherine Brown	Fulton
Cape Girardeau	10	L. R. Seabaugh	Cape Girardeau	Edwin K. Burford, Jr.	Cape Girardeau
Carter-Shannon	9	H. D. Rollins	Winona		
Chariton-Macon-Monroe-Randolph	2	L. E. Huber	Moberly	Robert Hasson	Moberly
Clay	1	W. L. Sportsman	N. Kansas City	Marvin L. Roberts	Kansas City
Clinton	1	W. B. Spaulding	Plattsburg	J. P. Mabrey	Plattsburg
Cole	5	James T. Leslie	Jefferson City	Jerome Schmidt	Jefferson City
Cooper	5	G. L. Chamherlain	Boonville	D. Hata	Boonville
Dallas-Hickory-Polk	8	Ben H. Koon	Bolivar	Evelyn Griffin	Buffalo
Dunklin	10	Paul Baldwin	Kennett	Quinton Tarver	Kennett
Franklin-Gasconade-Warren	4	Samuel C. Bonney	Washington	Carvel T. Shaw	Hermann
Grand River Medical Society (Caldwell-Livingston-Carroll-Grundy-Daviess-Harrison-Linn-Mercer-DeKalb)	1	George Mandler	Chillicothe	Albert D. Cross	Trenton
Greene	8	Wm. H. Snead	Springfield	Ernest Lorenc	Springfield
Henry	6	J. O. Smith	Clinton	R. S. Hollingsworth	Clinton
Howard	5	William J. Shaw	Fayette	M. P. Leech	Fayette
Jackson	7	Harry Statland	Kansas City	Wallace P. McKee	Kansas City
Jasper	8	Harry K. Wieman	Joplin	David O. Allen	Joplin
Jefferson	4	F. L. Kozal	Crystal City	J. L. Mayfield	Crystal City
Johnson	6	Donald E. Frein	Leeton	Harry Harkness	Warrensburg
Lafayette-Ray	6	Wilbur E. Fulkerson	Higginsville	William LaHue	Lexington
Lewis-Clark-Scotland	2	Earl Gilfillan	Memphis	Landis Y. Davis	Canton
Lincoln-St. Charles	4	Paul T. Berry	Troy	Gerald A. Yaeger	St. Charles
Marion-Ralls-Shelby	2	Thomas J. Fischer	Hannibal	John F. Clisham	Hannibal
Mid-Missouri County Medical Society (Phelps-Crawford-Dent-Pulaski-Maries-Laclede)	9	Wm. R. Lytle	Rolla	M. K. Underwood	Rolla
Miller	5			C. T. Buehler	Eldon
Mineral Area County Medical Society (St. Francois-Iron-Madison-Washington-Reynolds)	10	W. Paul Dennis	Flat River	C. W. Chastain	Farmington
Moniteau	5	K. S. Latham	California	L. M. Gallagher	California
Montgomery	5	E. J. T. Andersen	Montgomery City	Samuel J. Byland	Wellsville
Morgan	5	Ruth Kauffman	Versailles	J. Loren Washburn	Versailles
Northwest Missouri Medical Society (Nodaway-Holt-Atchison-Gentry-Worth)	1	John M. Wanamaker	Rock Port	Frank B. Matteson	Grant City
North Central Counties Medical Society (Adair-Schuyler-Knox-Sullivan-Putnam)	2	M. T. English, Jr.	Kirksville	Francis Tarvydas	Edina
Ozarks Medical Society (Barry-Lawrence-Stone-Christian-Taney-Newton-McDonald)	8	Wm. P. Hamilton	Aurora	Paul B. Anderson	Neosho
Pemiscot	10	Allen Gubin	Caruthersville	James W. Bernard	Caruthersville
Perry-Ste. Genevieve	10	Oscar Carron	Perryville	Joseph Lutkewitte	Ste. Genevieve
Pettis	6	A. R. Maddox	Sedalia	Robert L. Glass	Sedalia
Pike	2	Edward K. Jackson	Clarksville	L. G. Stuerman	Louisiana
Platte	1	H. Graham Parker	Platte City	H. C. Thurman	Parkville
St. Louis City	3	Walter Gunn	St. Louis	Richard V. Bradley	St. Louis
St. Louis County	4	James C. Sisk	Clayton	Melvin M. Schwartz	St. Louis
Saline	6	Robert W. Blalock	Marshall	John R. Lawrence	Marshall
Semo County Medical Society (Stoddard-New Madrid-Mississippi-Scott)	10	John Dernoncourt	Charleston	Thelma C. Buckthorpe	Sikeston
South Central Counties Medical Society (Howell-Oregon-Texas-Wright-Douglas-Ozark)	9	Amos L. Coffee	Willow Springs	Rollin H. Smith	West Plains
Webster	8	C. R. Macdonnell	Marshfield	Robert J. Bareis	Marshfield
West Central Missouri Medical Society (Bates-Cass-Cedar-St. Clair-Vernon)	6	W. S. Love	Nevada	Roy W. Pearse, Jr.	Nevada

Physician Distribution

(List of Missouri communities where MSMA member physicians are in active practice. Name of the community is followed by the county in which it is located and the medical society to which physicians of that community would normally belong.)

A

Affton, St. Louis*
Albany, Gentry, Northwest Missouri
Altenberg, Perry
Appleton City, St. Clair, West Central
Aurora, Lawrence, Ozarks
Ava, Douglas, South Central

B

Ballwin, St. Louis*
Belton, Cass, West Central
Berkeley, St. Louis*
Bethany, Harrison, Grand River
Bismarck, St. Francois, Mineral Area
Bloomfield, Stoddard, SEMO
Blue Springs, Jackson
Bolivar, Polk, Dallas-Hickory-Polk
Bonne Terre, St. Francois, Mineral Area
Boonville, Cooper
Bourbon, Crawford, Mid Missouri
Bowling Green, Pike
Branson, Taney, Ozarks
Braymer, Caldwell, Grand River
Brentwood, St. Louis*
Bridgeton, St. Louis*
Brookfield, Linn, Grand River
Browning, Linn, Grand River
Brunswick, Chariton
Buffalo, Dallas
Butler, Bates, West Central

C

Cabool, Texas, South Central
Cainsville, Harrison, Grand River
California, Moniteau
Camdenton, Camden
Cameron, Clinton
Canton, Lewis
Cape Girardeau, Cape Girardeau
Cardwell, Dunklin
Carrollton, Carroll, Grand River
Carthage, Jasper
Caruthersville, Pemiscot
Cassville, Barry, Ozarks
Centralia, Boone
Chaffee, Scott, SEMO
Charleston, Mississippi, SEMO
Chesterfield, St. Louis*
Chillicothe, Livingston, Grand River
Clarksville, Pike
Clayton, St. Louis*
Clinton, Henry
Columbia, Boone
Concordia, Lafayette
Crane, Stone, Ozarks
Creve Coeur, St. Louis*
Crystal City, Jefferson
Cuba, Crawford, Mid Missouri

D

Desloge, St. Francois, Mineral Area
DeSoto, Jefferson
Dexter, Stoddard, SEMO
Doniphan, Ripley, Butler-Ripley-Wayne

E

East Prairie, Mississippi, SEMO
Edina, Knox, North Central
Eldon, Miller
El Dorado Springs, Cedar, West Central
Elsberry, Lincoln
Everton, Jackson
Excelsior Springs, Clay

F

Farmington, St. Francois, Mineral Area
Fayette, Howard
Fenton, St. Louis*
Ferguson, St. Louis*
Festus, Jefferson
Flat River, St. Francois, Mineral Area
Florissant, St. Louis*
Forsyth, Taney, Ozarks
Fredericktown, Madison, Mineral Area
Frontenac, St. Louis*
Fulton, Callaway

G

Gallatin, Daviess, Grand River
Gashland, Clay
Gideon, New Madrid, SEMO
Gladden, St. Louis*
Glasgow, Howard
Glendale, St. Louis*
Gordonville, Cape Girardeau
Grandview, Jackson
Grant City, Worth, Northwest Missouri
Gravois Mills, Jackson
Greenfield, Dade, Barton-Dade

H

Hamilton, Caldwell, Grand River
Hannibal, Marion
Harrisonville, Cass, West Central
Hayti, Pemiscot
Herculaneum, Jefferson
Hermann, Gasconade, Franklin-Gasconade-Warren
Hickman Mills, Jackson
Higginsville, Lafayette
Hillsboro, Jefferson
Holden, Johnson
Hornersville, Dunklin
Houston, Texas, South Central
Humansville, Polk, Dallas-Hickory-Polk
Huntsville, Randolph, Chariton-Macon-Monroe-Randolph

I

Illmo, Cape Girardeau
Independence, Jackson
Ironton, Iron, Mineral Area

J

Jackson, Cape Girardeau
Jefferson Barracks, St. Louis*
Jefferson City, Cole
Jennings, St. Louis*
Joplin, Jasper

K

Kansas City, Jackson
Kennett, Dunklin
Kimmswick, Jefferson
King City, Gentry, Northwest Missouri
Kirksville, Adair, North Central
Kirkwood, St. Louis*
Knobnoster, Johnson
Knox City, Knox, North Central
Koch, St. Louis*

L

Ladue, St. Louis*
Lakeview Heights, Benton
Lamar, Barton
Leadwood, St. Francois, Mineral Area
Lebanon, Laclede, Mid Missouri
Lee's Summit, Jackson
Leeton, Johnson
Lemay, St. Louis*
Lexington, Lafayette
Liberty, Clay
Lockwood, Dade, Barton-Dade
Louisiana, Pike

M

Macon, Macon, Chariton-Macon-Monroe-Randolph
Malden, Dunklin
Maplewood, St. Louis*
Marceline, Linn, Grand River
Marshall, Saline
Marshfield, Webster
Marthasville, Warren, Franklin-Gasconade-Warren
Martin City, Jackson
Maryville, Nodaway, Northwest Missouri
Maysville, De Kalb, Grand River
Memphis, Scotland, Lewis-Clark-Scotland
Mexico, Audrian
Milan, Sullivan, North Central
Miller, Lawrence, Ozarks
Moberly, Randolph, Chariton-Macon-Monroe-Randolph
Monette, Barry, Ozarks
Montgomery City, Montgomery
Morehouse, New Madrid, SEMO
Morrisville, Polk, Dallas-Hickory-Polk
Mound City, Holt, Northwest Missouri
Mountain Grove, Wright, South Central
Mountain View, Howell, South Central
Mount Vernon, Lawrence, Ozarks

N

Neosho, Newton, Ozarks
Nevada, Vernon, West Central
New Florence, Montgomery
New Haven, Franklin
New Madrid, New Madrid, SEMO
Normandy, St. Louis*
North Kansas City, Clay

O

Oak Grove, Jackson
Odessa, Lafayette
O'Fallon, St. Charles, Lincoln-St. Charles
Olivette, St. Louis*
Oran, Scott
Osceola, St. Clair, West Central
Overland, St. Louis*
Owensville, Gasconade, Franklin-Gasconade-Warren
Ozark, Christian, Ozarks

P

Pacific, Franklin
Palmyra, Marion
Paris, Monroe, Chariton-Macon-Monroe-Randolph
Parkville, Platte
Parma, New Madrid, SEMO
Pattonsburg, Daviess, Grand River
Pattonville, St. Louis*
Perryville, Perry
Piedmont, Wayne, Butler-Ripley-Wayne
Pine Lawn, St. Louis*
Platte City, Platte
Plattsburg, Clinton
Pleasant Hill, Cass, West Central
Poplar Bluff, Butler
Portageville, New Madrid, SEMO
Potosi, Washington, Mineral Area
Princeton, Mercer, Grand River

R

Raytown, Jackson
Reeds Springs, Stone, Ozarks
Republic, Greene
Rich Hill, Bates, West Central
Richmond, Ray, Lafayette-Ray
Richmond Heights, St. Louis*
Ridgeway, Harrison, Grand River
Robertson, St. Louis*
Rock Hill, St. Louis*
Rockport, Atchison, Northwest Missouri
Rolla, Phelps, Mid Missouri
Rosendale, Andrew

S

St. Ann, St. Louis*
St. Charles, St. Charles, Lincoln-St. Charles
St. Clair, Franklin
Ste. Genevieve, Ste. Genevieve, Perry-Ste. Genevieve
St. James, Phelps, Mid Missouri
St. Joseph, Buchanan
St. Louis City*
Salem, Dent, Mid Missouri
Salisbury, Chariton
Sappington, St. Louis*

Savannah, Andrew
Sedalia, Pettis
Sedgewickville, Bollinger
Senath, Dunklin
Seymour, Webster
Shelbina, Shelby, Marion-Ralls-Shelby
Shelbyville, Shelby, Marion-Ralls-Shelby
Shrewbury, St. Louis*
Sikeston, Scott, SEMO
Slater, Saline
Smithton, Pettis
Smithville, Clay
Springfield, Greene
Stanberry, Gentry, Northwest Missouri
Steele, Pemiscot
Steelville, Crawford, Mid Missouri
Stockton, Cedar, West Central
Strafford, Greene
Sullivan, Franklin
Sweet Springs, Saline

T

Tarkio, Atchison, Northwest Missouri
Thayer, Oregon, South Central
Trenton, Grundy, Grand River
Troy, Lincoln

U

Union, Franklin
University City, St. Louis*

V

Valley Park, St. Louis*
Vandalia, Audrain
Versailles, Morgan
Viburnum, Iron, Mineral Area

W

Warrensburg, Johnson
Warrenton, Warren, Franklin-Gasconade-Warren
Warsaw, Benton
Washington, Franklin
Waverly, Lafayette
Waynesville, Pulaski, Mid Missouri
Webb City, Jasper
Webster Groves, St. Louis*
Wellsville, Montgomery
Wentzville, St. Charles, Lincoln-St. Charles
West Plains, Howell, South Central
Wheeling, Livingston, Grand River
Willard, Greene
Willow Springs, Howell, South Central
Windsor, Henry
Winona, Shannon, Carter-Shannon
Winston, Daviess, Grand River

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* Member may belong to St. Louis County Medical Society or St. Louis Medical Society.

Alphabetical Roster of Members

A

Aaron, George A., Independence
Abel, Charles C., St. Louis
Abel, Oliver, III, St. Louis
Abele, William A., Boonville
Abell, Walter E., St. Louis
Abrams, Morris, St. Louis
Acker, Harry L., St. Louis
Ackerman, Lauren V., St. Louis
Acuff, R. Phillip, St. Joseph
Adams, Howard D., Liberty
Adelman, Arthur, Kansas City
Adler, Benard C., St. Louis
Adler, Federico, Kansas City
Agee, Loren G., Kansas City
Agress, Harry, St. Louis
Ahern, Archibald M., St. Louis
Ahlefeld, Charles B., Kansas City
Ahlering, George H., Clayton
Ahlvin, Robert C., St. Louis
Aiken, George A., Marshall
Aiken, Richard F., Marshall
Aisenstadt, E. Albert, Kansas City
Aitken, Louis F., St. Louis
Aks, Daniel, Kansas City
Akyol, Salim, St. Louis
Alberg, Marvin R., Kansas City
Albrecht, Franklin H., St. Louis
Aldrich, James T., St. Louis
Alex, Morris, St. Louis
Alexander, Harry L., St. Louis
Allain, James J., N. Kansas City
Allaman, John M., Sarasota, Fla. (Member Buchanan County Medical Society)
Allan, James R., Excelsior Springs
Allbee, Roger H., Crystal City
Allebach, Hobart K., Kansas City
Allen, Claude J., Rich Hill
Allen, David O., Joplin
Allen, Erroll W., Carrollton
Allen, Henry C., Clayton
Allen, Hollis N., St. Louis
Allen, James H., St. Louis
Allen, Jerry H., Springfield
Allen, Joseph E., Columbia
Allen, Melvin A., St. Louis
Allen, Robert E., Kansas City
Allen, S. Lloyd, Kansas City
Allen, Willard M., St. Louis
Allen, William B., Kansas City
Allen, William C., Columbia
Allen, William E., Jr., St. Louis
Allen, William H., Nevada
Allison, James B., Springfield
Almond, Carl H., Columbia
Alonso-Yague, P., St. Louis
Alsop, Webb S., Jr., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Alsup, Frederick F., Belen, N. M. (Member Ozarks Medical Society)
Althaus, Carl J., St. Louis
Altheide, Harvey E., Ladue
Altheide, J. Paul, St. Louis
Altomare, Edward P., Kansas City
Altringer, Arthur N., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Alvis, Bennett Y., St. Louis
Alvis, Edmund B., St. Louis
Alyea, J. O., Cape Girardeau
Ames, Mary B., St. Joseph
Ames, William H., St. Joseph
Ammatelli, Francis J., Kansas City
Andersen, E. J. T., Montgomery City
Anderson, John M., St. Louis
Anderson, Paul B., Neosho
Anderson, Philip C., Columbia
Anderson, Raymond B., Kansas City
Anderson, Richard W., Kansas City
Anderson, William H., Fulton
Andrae, Robert L., Louisiana
Andrews, Berneil W., Kansas City
Andrus, Bailey C., Kansas City
Anstey, George, St. Louis
Anthony, Dallas, Springfield
Apicella, Frank V., Omaha, Nebr. (Member St. Louis Medical Society)
Appleberry, Charles H., Rivermines
Aquino, Philip J., Caruthersville
Archer, Perry C., Shelbyville
Arms, Arnold V., Kansas City
Arneson, Axel N., St. Louis
Arney, William G., St. Louis
Arnold, Eugene L., St. Louis
Arnold, Herbert M., Lamar
Arnold, Richard C., Sedalia
Aronberg, Lawrence M., St. Louis
Arst, Herbert E., Kansas City
Aschman, Theodore H., Kansas City
Asel, Norman D., Columbia
Ash, Charles J., Springfield
Asher, A. Graham, Kansas City
Ashley, Hugh V., Cape Girardeau
Ashley, Hugh, Jr., Cape Girardeau
Ashley, Thomas F., Springfield
Atcheson, Bellefield, Kansas City
Atkinson, Thomas E. Jr., Springfield
Atwell, Floyd C., Kansas City
Auer, Arthur I., St. Louis
Auer, Edward T., St. Louis
Aufderheide, G. Russell, St. Louis
Augustine, Robert W., St. Joseph
Aull, John, Kansas City
Auner, Cecil R., Springfield
Austin, George N., Columbia
Austin, Martin G., St. Louis
Averill, Keith H., Kansas City
Avery, Willard B., Boonville
Aylward, Howard J., St. Louis
Azuma, Nobutaka, St. Louis
Azzouni, J. N., St. Louis

B

Babka, Joseph J., St. Louis
Bach, Lysle M., Hannibal
Bachmann, Paul L., Independence
Backer, Matthias H., Jr., St. Louis
Backlar, Joseph, Woodland Hills, Calif. (Member St. Louis County Medical Society)
Baer, Alvin J., Kansas City
Bagby, James W., Clayton
Baggot, Michael C., Granite City, Ill. (Member St. Louis Medical Society)
Bahn, Charles F., Cape Girardeau
Bailey, Alan H., Mt. Vernon
Bailey, Drennan, St. Louis
Bailey, Frank A., St. Louis
Bailey, William H., St. Louis
Baird, Keim L., St. Louis
Baker, A. Sherwood, Columbia
Baker, Donald L., Odessa
Baker, James M., Columbia
Baker, Josephine D., Moberly
Baker, Philip J., Kansas City
Baker, Warren C., Savannah
Balazs, Karl J., St. Louis
Baldwin, Paul, Kennett
Baldwin, Richard, Springfield
Bales, Eugene L., Carrollton
Balhuizen, John, Kansas City (Member Clay County Medical Society)
Ball, James E., Joplin (Member Jackson County Medical Society)
Ball, Thomas J., Jr., Bergenfield, N. J. (Member St. Louis Medical Society)
Ballard, V. Bryce, Kansas City
Bandle, Donald F., St. Louis
Banet, Samuel R., St. Louis
Banton, M. Roman, St. Louis
Banton, William C., St. Louis
Barbour, Marvin R., Poplar Bluff
Barden, Frank W., Creve Coeur
Bardenheier, J. Phil, St. Louis
Bare, Chester I., Jr., Raytown
Bare, Edward F., Tarkio
Bareis, Robert J., Marshfield
Barelli, Pat A., Kansas City
Barger, O. B., Harrisonville
Barker, Edward T., St. Louis
Barloon, James H., Kansas City
Barnard, John L., Jr., Kansas City
Barnes, Robert H., Kansas City
Barnes, Seth S., Cape Girardeau
Barnett, Charles H., Bolivar
Barnett, Floyd A., Paris
Barnett, Gordon P., Kansas City
Barnett, Julian H., St. Louis
Barnett, Norman H., Joplin
Barnette, Eugene, St. Charles
Barone, Paul L., Nevada
Barrett, Scott R., St. Louis
Barrios, Francisco, St. Louis
Barrow, Jack, St. Louis
Barry, Gerald W., Kansas City
Barry, William B., Kansas City
Bartels, Leo G., St. Louis
Bartlett, Robert W., St. Louis
Bartlett, Willard, Jr., St. Louis
Bartnick, Mitchel L., St. Louis
Bascon, Charles H., New York, N. Y. (Member Buchanan County Medical Society)
Baska, R. E., Kansas City (Member West Central Missouri Medical Society)
Bass, Billy J., Salem
Bass, Walter R., Kansas City
Bassett, Robert B., St. Louis
Bates, George C., Kansas City (Member Clay County Medical Society)
Battersby, Richard S., Columbia
Bauer, Harold A., Lockwood
Bauer, John D., St. Louis
Bauer, Joseph A., St. Louis
Bauer, Maria, Granite City, Ill. (Member St. Louis Medical Society)
Bauer, Otto, Granite City, Ill. (Member St. Louis Medical Society)
Bauer, Robert A., St. Louis
Baum, Frank E., Kansas City
Bauman, Henry C., Maryville
Baumann, A. R., Steelville
Baumann, William B., San Francisco, Calif. (Member St. Louis Medical Society)
Baumgarten, Walter, Jr., St. Louis
Baumhardt, Edward E., Kansas City
Bawell, Malcolm B., St. Louis
Bay, Merrill R., Blue Springs
Beal, Homer, Malden
Beam, Sim F., St. Louis
Beard, Daniel D., St. Louis
Beare, J. Byron, St. Louis
Beare, Lucia V., St. Louis
Beasley, L. Kenneth, St. Louis
Beato, David L., St. Louis
Beck, Paul M., St. Joseph
Beck, Rea, St. Louis
Becke, William G., St. Louis
Beckemeyer, W. Albert, Sedalia
Becker, Bernard, St. Louis
Becker, Edward J., St. Louis
Becker, George H., St. Louis
Becker, Richard R., Kansas City
Becker, Rolfe A., Kansas City
Becker, Stanley C., St. Louis
Beckett, Theodore C., Boonville
Beckette, Edmund S., St. Louis
Beckman, Donald E., St. Louis
Beecher, Sheldon B., Poplar Bluff
Beers, Ellsworth G., Seymour
Behrens, Donald T., Richmond Heights
Behrens, Gerald L., St. Louis
Beidle, Raymond J., St. Louis
Belden, Edgar A., Jefferson City
Belew, Joe E., New York, N. Y. (Member St. Louis Medical Society)
Belinson, Louis, Jefferson City
Bell, Robert M., St. Louis
Bell, William F., Lee's Summit
Benage, Clarence M., St. Louis
Benjamin, Durand, St. Louis
Bennett, James D., Kansas City
Benoit, Hector W., Jr., Kansas City
Benson, Leo J., Jr., Kennett
Benson, Scott C., St. Joseph
Berard, Louis N., St. Louis
Berenson, Sheldon E., Kansas City
Berg, Leonard, St. Louis
Berg, Ralph, St. Louis
Berger, Edward J., St. Louis
Bergman, Hugo F., St. Louis
Bergmann, Dwayne, St. Louis
Bergmann, John F., St. Louis
Bergmann, Martin, St. Louis
Bergmann, Victor H., Kansas City
Bergner, Grace E., St. Louis
Berland, Harry I., St. Louis
Berman, Joseph P., St. Louis
Berman, William, St. Louis
Bernard, Harvey R., St. Louis
Bernard, J. W., Caruthersville
Berndsen, Gerard H., Rock Hill
Berney, Francis J., St. Joseph
Bernreiter, Michael, Kansas City
Bernstein, Aaron M., St. Louis

Bernstorff, Paul H., St. Louis
Berry, Guy N., Kansas City
Berry, John W., St. Louis
Berry, Maxwell G., Kansas City
Berry, Paul T., Troy
Bersche, Bertram L., St. Louis
Berwald, Irwin I., St. Louis
Bess, William E., Sedalia
Best, Robert, Higginsville
Bettonville, Paul J., Jr., St. Louis
Bickel, Vern T., Lamar
Biddy, Ralph L., St. Louis
Biggs, Alfred D., Jr., Kansas City
Biggs, Fred J., Jr., Poplar Bluff
Biggs, Harry L., Kansas City
Bikales, Victor W., Kansas City
Bills, Marvin L., Kansas City
Bilsky, Nathan, St. Louis
Bindbeutel, Arthur H., St. Louis
Bindbeutel, Donald A., Webster Groves
Binder, Morton A., St. Louis
Bircher, John L., St. Louis
Birenbaum, Aaron, St. Louis
Birge, Clifford A., St. Louis
Birney, William P., Hannibal
Birsner, Frank H., Carthage
Birsner, Louis J., St. Louis
Bishop, Marion D., Florissant
Bishop, Mary M., Ferguson
Bisno, Daniel, St. Louis
Black, Don A., Kansas City
Black, Eugene C., Kansas City
Black, James M., Carrollton, Ill.
(Member St. Louis County Medical Society)
Black, Samuel P. W., Columbia
Blacklock, David E., King City
Blackman, Nathan, Kirkwood
Blackmore, Thomas A., Windsor
Blades, Ross D., Springfield
Blair, Vilray P., Jr., St. Louis
Blalock, Robert W., Marshall
Blalock, William N., St. Louis
Blankenship, Dale M., Cape Girardeau
Blankenship, George W., Neosho
Blanton, J. C., Sikeston
Blim, Richard D., Kansas City
Block, Arnold S., St. Louis
Bloom, W. A., Fayette
Blunt, Charles P., St. Louis
Bock, Lux H., St. Louis
Bockelman, Clifford H., Brentwood
Boedeker, Roy V., St. Louis
Boemer, Lilburn C., St. Louis
Boger, James W., Sedalia
Bohne, William R., St. Louis
Bohnsack, Ralph W., Brookfield
Bohrer, Harry C., St. Louis
Boldizar, Albert G., St. Louis
Boldt, Thomas H., St. Louis
Boles, Clifford R., Clayton
Boley, James O., Kansas City
Bolgar, Bertalan, Festus
Bolinske, Robert E., St. Louis
Bolton, Robert L., Milwaukee, Wis.
(Member St. Louis Medical Society)
Bond, Leslie F., St. Louis
Bondurant, Bryce H., St. Louis
Bonebrake, M. D., Springfield
Bonfanti, Albert L., St. Louis
Bonney, Samuel C., Washington
Boone, Daniel S., Kansas City
(Member Clay County Medical Society)
Boone, Richard F., Hot Springs, Ark.
(Member Butler-Ripley-Wayne County Medical Society)
Bordy, Marvin D., Kansas City
Borenstine, Joseph, Kansas City
Borowsky, Benjamin A., St. Louis
Bortnick, Arthur R., St. Louis
Boswell, John R., St. Louis
Boteler, George M., Kansas City
(Member Buchanan County Medical Society)
Botwin, Arnold E., Kansas City
Boucher, Robert E., St. Louis
Boughnou, Harvey P., Kansas City
Bouhasin, John D., St. Louis
Bourke, Timothy S., Kansas City
Boutros, Amin, Kansas City
Boveri, Joseph C., St. Louis
Bowdern, Edward H., Richmond Heights
Bowe, Edwin E., Jefferson City
Bowen, Stephen F., Jr., St. Louis
Bowerman, Harold H., St. Louis
Bowersox, Warren A., Pacific
(Member St. Louis Medical Society)
Bowles, G. Robert, St. Louis
Bowles, Richard P., Liberty
Bowles, William T., St. Louis
Bowman, Melvin C., Neosho
Bowser, John F., Kansas City
Boyce, John M., Columbia
Boyd, Arthur M., St. Louis
Boyd, George K., Kansas City
Boydston, Catherine, Odessa
Boydston, W. Wayne, Odessa
Bozzo, Raymond J., Washington
Braby, Howard H., Independence
Bradford, John F., Kansas City
Bradley, Frank R., St. Louis
Bradley, Richard V., Clayton
Bradley, William W., Centralia
Bradshaw, W. D., Clinton
Brady, Charles H., Sedalia
Brady, Hugh S., Concordia
Brams, Jack B., Kansas City
Brand, Earl L., Webster Groves
Brandon, Walter L., Poplar Bluff
Brangle, Robert W., St. Louis
Brasher, Ben H., Lexington
Brasher, Charles A., Mt. Vernon
Braufman, Harvey S., St. Louis
Braverman, Abe E., Kansas City
Braverman, Elliot M., Sedalia
Brazos, John C., Smithton
Bregant, Robert E., Jefferson City
Bremser, Harry L., St. Louis
Brennan, George A., St. Louis
Brennan, John A., Farmington
Brennan, Patricia A., St. Louis
Brennan, Raymond P., Chillicothe
Brennan, Robert A., St. Louis
Brennan, Robert V., St. Louis
Brenner, Paul A., Owensville
Brereton, Robert L., Kirkwood
Brewer, Lake, Ridgeway
Brewster, Charlotte M., Kansas City
Bricker, Eugene M., St. Louis
Bricker, Neal S., St. Louis
Bridgens, James G., Independence
Brielmaier, Charles R., St. Louis
Brinker, Ray A., St. Louis
Briscoe, John R., Maplewood
Bristow, Robert B., St. Joseph
Brock, Bernard, Windsor
Brodeur, Armand E., Kirkwood
Bronson, Shael S., St. Louis
Brooke, Clement E., Columbia
Brookes, Henry S., Jr., St. Louis
Brookes, Robert D., St. Louis
Brookreson, Alton F., Poplar Bluff
Brooks, Arthur C., St. Louis
Brooks, John M., Springfield
(Member Dallas-Hickory-Polk County Medical Society)
Brother, George M., St. Louis
Broun, Goronwy O., St. Louis
Broun, Goronwy O., Jr., St. Louis
Brown, Adrian J., Kansas City
Brown, Alex L., Springfield
Brown, Daniel W., San Diego, Calif.
(Member St. Louis Medical Society)
Brown, E. Eugene, St. Louis
Brown, Elwyn S., Kansas City
Brown, Frederick B., Aurora
Brown, Irwin S., Kansas City
Brown, James B., St. Louis
Brown, James L., St. Louis
Brown, James M., St. Louis
Brown, James T., Springfield
Brown, John J., Fulton
Brown, Katherine S., Fulton
Brown, Lyman D., Springfield
Brown, Robert S., Kansas City
Brown, Seymour, St. Louis
Brownfield, Samuel T., Brookfield
Brownsberger, Robert H., Appleton City
Broyles, Glen H., Kansas City
Broyles, Watkins A., Bethany
Bruce, Helen L., St. Louis
Bruce, James G., Jefferson City
Bruce, Leo A., Sikeston
Bruce, Paul C., Excelsior Springs
Brukardt, Diane, Columbia
Brumm, Lawrence W., Kansas City
Bruner, Claude R., Columbia
Bruner, Robert E., Kansas City
Bruns, Kenneth, University City
Brust, Carl H., Mission, Kan.
(Member Jackson County Medical Society)
Bryan, James H., Clayton
Bryan, William H., Jr., Kansas City
Bryan, William T. K., St. Louis
Bryant, Sydney L., St. Joseph
Bryant, William O., Hayti
Buben, Robert W., Kirksville
Buckingham, William, Kansas City
Buckner, Robert C., Kansas City
Buckthorpe, Thelma C., Sikeston
Budd, John J., Jr., St. Louis
Budke, Harold A., Kansas City
Buehler, Carl T., Jr., Eldon
Buesseler, John A., Columbia
Bugg, Andrew F., Lordsburg, N. M.
(Member Mineral Area County Medical Society)
Bugg, George W., St. Louis
Buhler, Victor B., Kansas City
Buie, Bruce R., Kansas City
Bulger, Harold A., St. Louis
Bull, Ben M., Ironton
Bumgarner, James E., Columbia
Bumgarner, Roger W., Columbia
Bunting, Williston P., Kansas City
Burch, John E., Joplin
Burcham, Thomas R., Jr., Farmington
Burford, Cyrus E., St. Louis
Burford, Edwin K., Jr., Cape Girardeau
Burford, Thomas H., St. Louis
Burk, E. K., Kansas City
Burke, Robert J., St. Louis
Burkeholder, James N., Columbia
Burkey, Jordan W., Springfield
Burkhardt, Edward F., St. Louis
Burmeister, R. William, St. Louis
Burney, Wallace S., Miller
Burns, Beryl I., Columbia
(Member Jackson County Medical Society)
Burns, Francis J., St. Louis
Burns, Francis R., Hannibal
Burns, Thomas J., Houston
Burns, Thomas W., Columbia
Burnside, Charles R., Kirkwood
Burst, Donald O., St. Louis
Burstein, Robert, St. Louis
Busch, Anthony K., St. Louis
Busiek, Erwin F., Springfield
Busiek, Paul J., Springfield
Busiek, Urban J., Springfield
Bussmann, Donald W., St. Louis
Butcher, Harvey R., Jr., St. Louis
Butcher, Robert W., Kansas City
Butler, E. F., St. Joseph
Butsch, Richard H., St. Louis
Butterworth, Nelson S., Kansas City
Butts, James D., Rolla
Byars, Louis T., St. Louis
Byers, Philip L., Kansas City
Byland, Benjamin F., Maryville
Byland, Samuel J., Wellsville
Bynum, William R., Columbia
Byrne, John E., St. Louis
Byrne, Paul A., St. Louis

C

Caciolo, Carlo, St. Louis
Cacioppo, Joseph E., St. Louis
Cadbury, Jane B., Chesterfield
Cadice, John B., St. Louis
Caffrey, Raymond J., Kansas City
Cain, Alvin R., Lamar
Cain, Charles F., Caruthersville
Caldwell, Fred, Poplar Bluff
Caldwell, Jacob D., Hayti
Caldwell, John K., Kansas City
Calkins, Delevan, St. Louis
Callahan, Donald E., Jennings
Callahan, Joseph D., St. Louis
Callaway, Guy D., Springfield
Callaway, Guy D., Jr., Springfield
Callihan, Charles F., West Plains
Calodney, Martin M., St. Louis
Calovich, Emery R., Kansas City
Camel, H. Marvin, St. Louis
Campbell, A. J., Sedalia
Campbell, Cecil S., St. Louis
Cambbell, Edward D., Cape Girardeau
Campbell, Frederick B., Kansas City
Campbell, James E., Macon
Campbell, John G., Kansas City
Campos, Francisco J., St. Louis
Canaan, Samuel A., Jr., St. Louis
Canella, John M., Hannibal
Canepa, John B., St. Louis
Canlas, Emilio M., Poplar Bluff
Cannon, Edward M., St. Louis
Canty, Eugene J., St. Charles
Capetti, Alex P., Crane
Cappel, Powel B., St. Louis
Capps, Eugene C., Shawnee Mission, Kans.
(Member Jackson County Medical Society)
Caravelli, Anthony F., Downey, Ill.
(Member St. Louis Medical Society)
Carbaugh, Glenn C., Kansas City
Carleton, Charles E., Jr., Farmington
Carlin, Albert L., Stanberry
Carlin, M. Richard, St. Louis

Carlson, Arne E., St. Louis
Carlson, Hjalmar E., Kansas City
Carmichael, Francis A., Jr., Kansas City
Carnes, Victor M., Joplin
Carpenter, George T., St. Joseph
Carpenter, George W., Chillicothe
Carpenter, Wallace, Rockport
Carr, Archie D., St. Louis
Carr, G. Thomas, St. Louis
Carrier, Edson C., Kansas City
Carrier, John A., St. Louis
Carrington, Howard W., Lebanon
Carroll, George A., St. Louis
Carroll, Grayson, St. Louis
Carroll, Percy J., Clayton
Carroll, Thomas W., Lamar
Carron, Oscar A., Perryville
Carter, Edwin E., Clayton
Carter, Howard, Hamilton
Carter, James R., Neosho
Carter, John F., St. Louis
Caruso, Alfred A., Kansas City
Cary, John M., St. Louis
Casady, Gilbert N., Prairie Village, Kan. (Member Jackson County Medical Society)
Casebolt, Buford T., Kansas City
Cash, Charles R., Kennett
Cason, Elbert H., St. Louis
Cassel, Melvin A., St. Louis
Castelaw, Rush E., Kansas City
Castillo, Michael E., N. Kansas City
Catanzaro, Anthony F., St. Louis
Catanzaro, Francis J., St. Louis
Catanzaro, Rudolph E., St. Louis
Cavaness, Ernest W., Encinitas, Calif. (Member Jackson County Medical Society)
Centner, Paul J., Knasas City
Chalkley, Judson I., Columbia
Chamberlain, Gilbert L., Boonville
Chambers, James Q., Jr., Kansas City
Chamness, James T., St. Louis
Chandler, Robert A., Kansas City
Chaplin, Hugh, Jr., St. Louis
Chapman, Arthur H., Kansas City
Chapman, Jean A., Cape Girardeau
Chapman, Jerry R., Steele
Chapman, Samuel B., Kansas City
Charles, Benjamin H., St. Louis
Charles, Cecil M., Clayton
Charnas, Raymond M., St. Louis
Chase, Ned B., Jr., Joplin
Chastain, Charles W., Farmington
Chastain, Maurice W., N. Kansas City
Cheng, Alfred K., San Francisco, Calif. (Member Jackson County Medical Society)
Chernoff, Selbert G., Kansas City
Cherre, Anthony J., St. Louis
Cherre, Charles J., St. Louis
Chesney, George W., Joplin
Chiasson, E. Chaille, Columbia
Chieffi, Margaret, St. Louis
Chiles, David R., Smithville
Chinsky, Murray, St. Louis
Christ, Martin H., St. Joseph
Christensen, Roger F., Louisiana
Christy, Raymond A., Springfield
Chute, W. Deward, Moberly
Ciampa, Thomas, St. Louis
Ciapciak, Stanley J., St. Louis
Clark, Chester L., Trenton
Clark, Clarence L., St. Louis
Clark, Harold B., Kansas City
Clark, Irving H., Kansas City
Clark, Kendall A., Jefferson City
Clarke, Michael J., Springfield
Clary, William F., Springfield
Claseman, Wilma W., St. Louis
Clasen, Arthur C., Miami Beach, Fla. (Member Jackson County Medical Society)
Clawson, James W., Springfield
Clayton, Edgar L., Springfield
Cleary, Frank, St. Louis
Cleveland, Horace F., Long Beach, Calif. (Member St. Louis Medical Society)
Clever, Henry W., Jr., St. Charles
Cline, Harold H., Piedmont
Cline, Merle A., Kansas City
Clisham, John F., Hannibal
Clithero, William H., Duarte, Calif. (Member St. Louis Medical Society)
Cloyd, Mason D., St. Louis
Coates, Thomas A., St. Louis
Cobb, James R., Kansas City
Coben, Lawrence A., St. Louis
Coburn, Donald F., Kansas City
Cochran, Donald Q., Columbia
Cochran, Jo R., Cape Girardeau
Cochran, Thomas E., Jr., Springfield
Cochrane, Joseph J., Kansas City
Cockerell, Sanford F., Independence
Coffee, Amos L., Willow Springs
Coffey, Ralph R., Kansas City
Coffin, Ernest L., Lakeworth, Fla. (Member St. Louis Medical Society)
Coffin, Theodore A., Kansas City
Coffman, Esther E. L., Lakeworth, Fla. (Member Ozarks Medical Society)
Cohen, Benjamin H., Clayton
Cohen, Frank, St. Ann
Cohen, Harry K., Kansas City
Cohen, Hilliard, Kansas City
Cohen, Louis, St. Louis
Cohen, Robert S., St. Louis
Cohle, Richard R., Carthage
Cohnberg, Rosellen E., Neosho
Cohrs, Clarence C., Moberly
Cokingtin, Leovigildo, Kansas City
Cokrhame, Jack, St. Louis
Coldwater, Kenneth B., St. Louis
Cole, William R., St. Louis
Coleman, William G., St. Louis
Colglazier, Mary C., Kansas City
Coller, Frederick B., Springfield
Collins, Gretchen D., Macon
Collins, John M., St. Louis
Collodi, George A., Brentwood
Colom, George A., Kansas City
Colwill, Jack M., Columbia
Combs, Joseph J., Chesterfield
Comeau, Richard A., Dexter
Comens, Phillip, St. Louis
Comens, Ruth C., St. Louis
Commerford, James J., Crystal City
Commerford, John F., St. Charles
Compton, James R., Whittier, Calif. (Member St. Louis County Medical Society)
Cone, Alfred J., Chesterfield
Connell, Evan S., Kansas City
Conrad, Adolph H., Jr., St. Louis
Conrad, Joseph J., Chillicothe
Conrad, Marshall B., St. Louis
Conrad, Raymond C., Springfield
Cook, Ralph L., St. Louis
Cook, O. W., Caruthersville
Cook, Thomas B., Richmond
Cooper, Charles S., Kansas City
Cooper, Claude W., Thayer
Cooper, Henry T., St. Louis
Cooper, John H., Kansas City
Cooper, Lawrence E., Ft. Myers, Fla. (Member Pemiscot County Medical Society)
Cooper, Leo F., Kansas City
Cooper, Maurice E., Columbia
Cooper, R. Lee, Warrensburg
Cooper, Theodore, St. Louis
Cooper, Thomas J., St. Louis
Cope, James C., Columbia
Cope, Joseph S., Lexington
Copher, Glover H., St. Louis
Copp, Ralph, Jr., St. Louis
Corday, Robert J., St. Louis
Cordonnier, Justin, St. Louis
Correnti, Nicholas A., St. Louis
Cortner, Mary C., Kansas City
Cossins, Carlos E., St. Joseph
Costa, Dominic V., St. Louis
Costello, Cyril J., St. Louis
Costello, Joseph P., Jr., Brentwood
Costen, William S., St. Louis
Costrino, John J., University City
Costrino, Joseph A., St. Louis
Coughlin, Bertrand D., St. Louis
Counsell, Chester M., Kansas City
Cowan, Robert D., Aurora
Cowan, Watt O., Greenfield
Cowdry, Edmund V., Jr., St. Louis
Cowherd, Joseph B., Kansas City
Cox, Kenneth E., Kansas City
Cox, Mary E., St. Louis
Cox, William A., Jefferson City
Cox, William L., Liberty
Coxe, William S., St. Louis
Cozart, Duane E., University City
Craig, Irwin T., Joplin
Craig, Owen W. D., St. Joseph
Craig, Richard O., St. Joseph
Cramb, Arthur B., Lakeland, Fla. (Member North Central Counties Medical Society)
Crawford, Archie L., Joplin
Crawford, Katherine J., University City
Crawford, Oral B., Springfield
Crawford, Robert M., Sullivan
Crayton, Billy G., Waverly
Creech, Joseph C., Troy
Crego, Clarence H., Jr., St. Louis
Cremer, Mabelle A., Kansas City
Cremer, William J., Fulton
Cresswell, George F., Potosi
Crews, Robert N., Fulton
Crider, Russell J., St. Charles
Criscione, James R., St. Louis
Crispell, Lawrence S., Joplin
Critchlow, William C., Sikeston
Crites, Edward, Sedgewickville
Crocker, Albert M.. Kansas City
Crockett, James E., Kansas City
Croom, Dorwyn W., Malden
Crosby, Alice S., Salem
Cross, Albert D., Trenton
Crossman, Robert W., Webster Groves
Crotty, John P., St. Louis
Crouch, F. Richard, Farmington
Crow, Asa A., Cardwell
Crowe, John T., Cape Girardeau
Crowell, Hugh C., St. Louis
Crozier, Franklin A., Richmond
Culbertson, William F., Kansas City
Cullum, Albert G. J., Middlesboro, Ky. (Member St. Louis County Medical Society)
Cummings, James H., St. Louis
Cunningham, Darral D., Springfield
Cunningham, E. J., Jr., St. Louis
Curran, Desmond, Kansas City
Curran, Herbert A., St. Joseph
Curts, Calvin J., Kansas City
Cutcliff, Daniel J., Kansas City
Cutler, Harold M., St. Louis
Cutler, Harry, St. Louis
Czebrinski, Edward W., St. Louis

D

Daake, John W., St. Louis
Dabbs, LeRoy, St. Louis
Dabbs, Wilbur D., Neosho
Dahms, Gustave, St. Louis
Daley, Frank R., Hamilton
Dalton, Arthur R., St. Louis
Dalton, Timothy T., Kansas City
Daman, George A., St. Louis
Dames, Richard J., St. Louis
Damron, Edward O., Elsberry
Damron, Oscar H., Warrensburg
Danis, Peter G., St. Louis
Dankner, Arnold, Clayton
Dann, David S., Kansas City
Darnell, Thomas F. B., Columbia
Dash, Udaya Nath, St. Louis
Daughaday, William H., St. Louis
Daum, Harold F., Sedalia
Davault, George K., Richmond
Davidson, John D., St. Louis
Davidson, Morris, Clayton
Davie, Joseph, St. Louis
Davis, C. Braxton, Nevada
Davis, Donald R., Kansas City
Davis, Edgar W., St. Louis
Davis, Frank L., St. Louis
Davis, Herbert V., Kansas City
Davis, Irl R., St. Louis
Davis, Jack M., Kansas City
Davis, John J., Overland Park, Kan. (Member Jackson County Medical Society)
Davis, Kenneth A., Kansas City
Davis, Landis Y., Canton
Davis, Leonard L., Jr., Mexico
Davis, Martin W., St. Louis
Davis, Richard E., Kansas City
Davis, Robert C., Kansas City
Davis, Wilbur L., Charleston
Day, Anthony B., Marshall
Day, John K., Bowling Green
Day, Maxwell, St. Joseph
Deakin, Rogers, St. Louis
Dean, Francis D., Fayette
Dean, Lee W., Jr., St. Louis
Decker, Albert I., Kansas City
DeGenova, Gerald H., Ste. Genevieve
DeHovitz, Bernard, St. Louis
Deitchman, Robert B., St. Louis
de la Torre, John J., Sullivan
Delzell, William A., Willard
DeMaria, Peter F., Kansas City
Demis, D. Joseph, St. Louis
Demko, William, St. Louis
DeMott, John D , Kansas City
DeMotte, John A., Kansas City
Dempsey, Kenneth J., Milwaukee, Wis. (Member St. Louis Medical Society)
Denk, Alan F., St. Louis
Denney, Richard W., Mountain Grove
Denninghoff, James C., Columbia
Dennis, W. Paul, Flat River
Denny, H. M., Union

Denton, Jimmy E., Ventura, Calif. (Member Buchanan County Medical Society)
Dernoncourt, John E., Charleston
De Stefani, Carlo, St. Louis
DeTar, Burleigh E., Joplin
DeTar, B. E., Jr., Joplin
Dettmer, Robert F., Ironton
Deutch, Max, St. Louis
Devine, John B., St. Louis
Devine, Joyce E., St. Louis
Devins, George S., Kansas City
Dewald, Paul A., St. Louis
De Weese, Marion S., Columbia
Dewein, Edward G., West Point, N. Y. (Member St. Louis Medical Society)
Dexheimer, Frank R., Columbia
Deyton, John W., St. Louis
Dickerson, Omar B., Westwood, Calif. (Member St. Louis Medical Society)
Dickler, Donald J., St. Louis
Diehr, Maurice A., St. Louis
Diekroeger, Manuel L., Boonville
Diemer, Peter A., St. Louis
Dietrich, Karl D., Columbia
Dietz, M. Wendell, Springfield
DiLeo, Senatro W., Jennings
Dill, Foster A., Maplewood
Dillard, Burl M., St. Louis
Dillard, Erin M., Springfield
Dills, Joseph N., Springfield
Dinelli, Frank E., Poplar Bluff
Diveley, Rexford L., Kansas City
Dixon, John R., Brookfield
Dixon, Vewiser L., Kansas City
Dlabal, Luke J., Independence
Dmytryk, Eugene T., St. Louis
Doane, William L., Grandview
Dodd, Robert B., St. Louis
Dodge, Mark, Kansas City
Dodge, Milton, Shawnee Mission, Kan. (Member Jackson County Medical Society)
Doering, Robert W., Kansas City
Doggett, Sylvester, Sikeston
Doisy, Robert A., Glendale
Dolan, Daniel L., Springfield
Dolan, John T., Jr., St. Louis
Dolezal, Joseph B., Kansas City
Donahoe, James L., St. Louis
Donaldson, Robert C., St. Louis
Donati, Robert M., St. Louis
Donegan, William L., Columbia
Donley, Leo F., Jr., St. Louis
Donley, Robert R., Monett
Donnell, Harold E., DeSoto
Donnell, Robert H., Crystal City
Donnell, Thomas A., DeSoto
Donovan, William T., Chesterfield
Dorsch, Ervin H., Independence
Dorsett, E. Lee, Indianola, Miss. (Member St. Louis Medical Society)
Douglass, Jesse E., Kansas City (Member Jasper County Medical Society)
Dowd, James F., Jr., St. Louis
Dowell, Donald M., Chillicothe
Dowell, J. Larry, Pattonsburg
Downey, James W., Kansas City
Doyle, Charles R., St. Louis
Doyle, Matthew J., Jefferson City
Drace, Charles C., St. Louis
Drace, Charles C., Jr., St. Louis
Drake, Avery A., Rolla
Drake, Roy F., Kansas City
Drake, Truman G., St. Louis
Drake, William L., Jr., St. Louis
Draney, Thomas E., Kansas City
Draper, Bernard, Boonville
Draper, Gary A., Boonville
Drennan, James A., San Leandro, Calif. (Member St. Louis Medical Society)
Drescher, Emmett B., St. Louis
Drews, Robert C., St. Louis
Drey, Norman W., St. Louis
Dreyer, Carl J., Webster Groves
Dreyer, Philip V., Huntsville
Dreyer, William F., Houston
Drisko, Robert M., Kansas City
Drowns, Bruce V., Kansas City
Drum, Helen M., Clayton
Dubuque, Theodore J., Jr., St. Louis
Duden, Charles W., St. Louis
Duemler, John H., Gladden
Duemler, Robert H., St. Louis
Duer, Mildred C., Kansas City
Duffy, Francis G., St. Louis
Duffy, Oliver F., Trenton
Duggan, John J., Jr., Kirkwood
Dulick, Michael, Brentwood
Duling, Gerald J., St. Charles
DuMont, Clement C., St. Joseph
DuMontier, R. J., O'Fallon
Dunaway, Howard A., Sikeston
Duncan, Robert D., Springfield
Duncan, William H., Kansas City
Dunham, Robert H., N. Kansas City
Dunleavy, James D., Kansas City
Dunmire, George Q., Kennett
Dunn, Robert E., St. Louis
Dunshee, Robert E., Maryville
Durnell, Monaford D., Lee's Summit
Durst, Henry, Fulton
Dworkin, Saul, St. Louis
Dwyer, Frank X., Kansas City
Dwyer, Hugh L., Kansas City
Dwyer, Reinhardt D., N. Kansas City
Dwyer, Thomas L., Mexico
Dyer, Dallas J., St. Louis

E

Eades, Dee W., St. Louis
Eagleton, Mark D., Clayton
Eanet, Morton P., Kansas City
Earp, Ralph K., St. Louis
Eastwood, Robert A., Springfield
Ebel, Eugene H., St. Louis
Eber, Carl T., St. Louis
Eberle, John P., St. Louis
Eberle, Vincent L., St. Louis
Echterhoff, Harry R., St. Louis
Eck, Birkle, St. Louis
Ecker, Decider, Pacific
Eckert, Clarence T., St. Louis
Ecklund, Archibald M., San Diego, Calif. (Member St. Louis Medical Society)
Ector, Henry J., Mexico
Edde, Clifford G., Kansas City
Edele, Eugene H., St. Louis
Edmonds, Devilla D., Leawood, Kan. (Member Jackson County Medical Society)
Edwards, D. R., Sedalia
Edwards, Francis L., Monett
Edwards, Joseph C., St. Louis
Edwards, Theodore F., Kansas City
Edwards, Waldo B., Kirkwood (Member Jefferson County Medical Society)
Efron, Joseph, St. Louis
Egan, Robert C., St. Louis
Egan, Thomas F., St. Louis
Eggers, George W. N., Jr., Columbia
Eggleston, D. E., Macon
Egley, Loren E., St. Louis
Eidelman, Jack R., St. Louis
Eigel, Edwin G., St. Louis
Eimer, Charles E., St. Louis
Eisemann, Gustave, Kansas City
Eisenmann, Benjamin P., New Haven
Eisenstein, Albert B., St. Louis
Ekern, H. Peter, Mexico
Eklund, Alfred W., Pleasant Hill
Elam, James O., Kansas City
Eldenburg, Donald, Sedalia
Elders, Frank A., Jr., Cuba
Eldridge, Charles J., Kansas City
Elias, David J., Independence
Eliscu, Juliette, Joplin
Elkins, Ronald F., Springfield
Eller, C. Howe, Clayton
Ellersieck, Dorothy M., St. Louis
Ellett, William H., Appleton City
Elliott, James R., Pasadena, Calif. (Member Jackson County Medical Society)
Elliott, Raymond G., Kansas City
Elliott, Wade E., Kansas City
Ellis, Burnett E., Gideon
Ellis, Calvin C., St. Louis
Ellis, Elmer F., Kansas City
Ellis, Francis J., Springfield
Ellis, Harry L., Springfield
Ellison, Leroy E., Maplewood
Ellsworth, Willard, Cainsville
Elrod, Dennis B., Placida, Fla. (Member Cape Girardeau County Medical Society)
Elser, Otto H., Independence
Elson, Julius, Ladue
Emerson, Reynolds L., St. Louis
Emmert, Fred, St. Louis
Engel, Lawrence P., Kansas City
Engelhardt, Robert C., Poplar Bluff
Engelking, David F., Kansas City
Engelmann, Calvin E., Kansas City
English, Milton T., Jr., Kirksville
English, Wallace D., Cardwell
Engman, Martin F., Jr., St. Louis
Enloe, Lawrence D., Jefferson City
Epp, George J., St. Louis
Epple, Kathryn C., Mexico
Epple, Lawrence K., Mexico
Erlanger, Joseph, St. Louis
Ernst, Edwin C., St. Louis
Ernst, Edwin C., Jr., St. Louis
Ernst, Joseph G., Oakland
Ernst, Richard E., St. Louis
Ernst, Roland P., St. Louis
Eshelman, Albert D., Independence
Eskeles, Irwin H., St. Louis
Esslinger, Arthur T. J., St. Louis
Estes, Albert M., Cape Girardeau
Estes, Jack M., Ferguson
Eto, Jackson, St. Louis
Eubank, David F., Kansas City
Eubank, Dillard M., Raytown
Eubank, William R., Kansas City
Eubank, William Y., Kansas City
Evans, Alden M., Columbia
Evans, Ezra L., Jr., Springfield
Evans, Harry T., Branson
Eversoll, Norton J., Hollywood, Fla. (Member St. Louis County Medical Society)
Exon, C. Stuart, Jefferson City
Eyermann, Charles H., St. Louis
Eyermann, Edward L., Jr., St. Louis
Eyermann, H. Walter, Warrenton

F

Fakhoury, Donald A., Kansas City (Member Clay County Medical Society)
Fair, William L., Chillicothe
Fairchild, James F., Perryville
Fairshter, Alex E., St. Louis
Falk, O. P. J., St. Louis
Fallet, Charles E., DeSoto
Fallon, Richard H., St. Louis
Farley, Claude C., Kansas City
Farley, William M., St. Louis
Farney, Jacob P., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Farnsworth, Jesse J., Kansas City
Farrar, Charles B., Cape Girardeau
Farrell, Robert J., St. Louis
Farris, Larry E., St. Louis
Farthing, Fred R., Springfield
Farthing, Gene W., Springfield
Feierabend, Frank L., Kansas City
Feind, Earl E., Rolla
Feinstein, Leon A., St. Louis
Feist, George V., Kansas City
Feldaker, Robert M., St. Louis
Feldman, David, St. Louis
Felix, Robert H., St. Louis
Feller, Harold H., St. Louis
Fellhauer, Carl M., St. Louis
Feltz, Lawrence W., Perryville
Ferguson, Donald S., Kansas City
Ferguson, James T., Kansas City
Ferguson, John P., Jr , Springfield
Ferguson, L. H., Jr., Joplin
Ferguson, Luther J., St. Joseph
Ferguson, Ralph L., Joplin
Ferguson, Robert M., Webb City
Ferguson, Thomas B., St. Louis
Ferguson, Wilson J., Sikeston
Ferrara, John P., St. Louis
Ferrell, Thomas E., Jr., Springfield
Ferris, Carl R., Kansas City
Ferro, Anthony L., St. Louis
Fessenden, Ersel M., Springfield
Finger, Donald H., St. Louis
Fingerhood, Marvin G., St. Louis
Fingert, Hyman H., St. Louis
Fink, LeRoy L., St. Louis
Finkel, Barney W., St. Louis
Finkle, Robert H., Independence
Finley, Freeman L., St. Louis
Finn, Murray E., St. Louis
Finnegan, Joseph V., St. Louis
Finney, William O., Chaffee
Fischer, Edward H., N. Kansas City
Fischer, Erich, St. Louis
Fischer, Theodore, Altenburg
Fischer, Thomas J., Hannibal
Fish, Virgil O., St. Louis
Fisher, Joseph L., St. Joseph
Fisher, Stanley D., Sedalia
Fitch, C. H. Max, Springfield
FitzGerald, Leo P., University City
Fitzgerald, Robert H., Independence
Fitzgerald, William T., St. Louis
Flance, Israel J., St. Louis
Flanders, Virgil E., Kansas City
Flanigan, George D., Jr., St. Louis
Flatley, John A., Kansas City
Flavan, David B., St. Louis

Fleishman, Alfred, University City
Fleming, J. Will, Moberly
Fleming, Paul D., Waterloo, Ill. (Member St. Louis County Medical Society)
Fleming, Robert J., St. Charles
Fleming, Royall B., Kansas City
Fleming, Thomas S., Moberly
Fletes, James W., St. Louis
Florian, Albert J., Kansas City
Flotte, Bernard H., St. Louis
Flotte, Sylvester A., Jennings
Flynn, Edward P., St. Louis
Flynn, John T., St. Louis
Flynn, Joseph E., St. Louis
Flynn, Thomas T., St. Louis
Focht, Ralph H., Strafford
Fogerson, Virginia L., Branson
Folck, William P., Kansas City
Folkner, A. L., Warrensburg
Ford, Lee T., Jr., St. Louis
Ford, Walter W., Gordonville
Ford, William, Farmington
Foreman, Phillip B., Hannibal
Forgrave, John R., St. Joseph
Forgrave, Leon P., St. Joseph
Forman, George W., St. Joseph
Forman, Louis H., Kansas City
Forsen, James A., St. Louis
Forsman, Waldo W., Jr., St. Louis
Forster, Armand C., St. Louis
Forsyth, B. Todd, St. Louis
Forsythe, Robert W., Kansas City
Forti, John J., St. Louis
Foster, Howard M., St. Louis
Foster, Jack L., Desloge
Foster, Leon, St. Louis
Fouts, Dallas B., Sr., Independence
Fowler, Fred D., Kansas City
Fowler, I. Charles, N. Kansas City
Fowler, James W., Kansas City
Fowler, Marvin L., West Plains
Fox, Leon J., St. Louis
Fox, Robert E., St. Louis
Frain, Marie M., Anchorage, Alaska (Member Mineral Area County Medical Society)
Frame, Homer G., Springfield
Francis, William C., Springfield
Francka, W. F., Hannibal
Frank, Alvin R., St. Louis
Franklin, Curtis U., Kansas City
Franklin, Harold A., St. Louis
Franklin, Max S., St. Louis
Fraser, Richard A., Richards-Gebaur A.F.B. (Member St. Louis Medical Society)
Frawley, Thomas F., St. Louis
Frazier, Robert L., Charleston
Fredeen, Robert C., Kansas City
Frederick, Raymond O., St. Louis
Freedman, Harold, St. Louis
Freedman, Ruth S., St. Louis
Freeman, David M., St. Louis
Freeman, Spencer L., Kirksville
Freiheit, Harold J., St. Louis
Freiman, S. Michael, St. Louis
Freimuth, L. E., St. Louis
Frein, Donald E., Leeton
Frerking, Herbert W., St. Louis
Freund, Samuel J., St. Louis
Frick, John P., Kansas City
Friedman, Bernard, St. Louis
Friedman, Morris L., Kansas City
Friedman, Paul L., St. Louis
Friedman, Robert H., St. Louis
Friedrich, Ernst R., St. Louis
Fries, Armand D., St. Louis
Fries, John W., St. Louis
Friskel, Arthur K., St. Louis
Fritsch, Andrew J., Joplin
Fritzlen, Thomas J., Kansas City
Froelich, Edwin J., Lebanon
Froelich, Rae W., Lebanon
Froelich, Robert E., Columbia
Frumson, Guy H., St. Louis
Fryer, Minot P., St. Louis
Fuchs, George J., Barnett (Member St. Louis County Medical Society)
Fuchs, George J., Jr., Columbia
Fuhrman, Donald L., Kansas City
Fulkerson, Wilbur E., Higginsville
Fulks, Richard B., California
Fullgrabe, Emil A., Jefferson City
Fulton, Albert E., Kansas City
Funsch, Robert E., St. Louis
Furla, Gus J., St. Louis
Furlow, Leonard T., St. Louis
Fury, Tex E., Kansas City
Fuson, Levi H., St. Joseph
Fuson, William A., Trenton

G

Gaffney, Caldwell J., St. Louis
Gafney, George T., St. Louis
Gagliardo, Joseph, St. Louis
Gaines, Quentin M., Kirkwood
Gainey, Harold L., Kansas City
Galbol, Harley, Excelsior Springs
Galbreath, Ashford M., Kansas City
Gale, Arthur H., Overland
Gale, Joseph F., Chillicothe
Gale, Philip R., St. Louis
Galeota, William R., Columbia
Gall, Ira, Clayton
Gallagher, Lionel M., California
Gallagher, Neil I., St. Louis
Gandlmayr, Jack M., St. Louis
Ganley, William C., Kansas City
Gansloser, Wilbert M., Clayton
Gantner, George E., Jr., St. Louis
Gantt, Ernest S., Jr., Mexico
Gantz, John A., Affton
Garb, Solomon, Columbia
Garcia, Charles L., Mexico
Gard, Raymond F., Independence
Gardner, Joseph W., Reeds Springs
Garfinkel, Bernard T., St. Louis
Garner, Lynn M., Jefferson City
Garrett, Glen H., Columbia
Garrison, Roy F., Kansas City
Garrison, T. W., Camdenton (Member Mid-Missouri County Medical Society)
Gary, George, Marceline
Gaskins, Charles W., Ironton
Gaskins, John H., Kansas City
Gass, Herbert H., St. Louis
Gauer, Robert J., Kansas City
Gaunt, Frank P., Webster Groves
Gaunt, William D., Columbia
Gay, Andrew J., St. Louis
Gay, Elizabeth K., St. Louis
Gay, George R., Columbia
Gearhart, Merriam, Bethany
Gearhart, Wilbur H., St. Louis
Gedney, William B., Valley Park
Geha, Braham J., Kansas City
Geise, August W., Jr., St. Louis
Geisler, Gerald F., St. Louis
Gempel, Paul A., Kansas City
Gentry, Enoch N., Jr., Kansas City
Gentry, Marvin C., Ava
Gentry, Merritt L., Warsaw
Gentsch, Kenneth W., St. Louis
German, Walter A., Jr., Springfield
Gernstetter, Sangwill L., Poplar Bluff
Gerst, Aloysius C., St. Louis
Gibson, David M., Kansas City
Gibson, Helen F., St. Louis
Gibstine, Marvin H., St. Ann
Giddings, Frank C., Springfield
Giem, Ross N., Sullivan
Gieselman, Ralph V., St. Louis
Giesler, Donald H., Osceola
Gilcrest, Harry R., St. Louis
Gildea, Edwin F., St. Louis
Gildea, Margaret C. L., St. Louis
Gilden, Jerome J., St. Louis
Gilfillan, Earl E., Memphis
Gilkey, Harry M., Kansas City
Gillespie, Roy, Branson
Gillespie, William J., St. Louis
Gilmore, Frank P., St. Louis
Gilpin, Doris C., St. Louis
Ginardi, Donald E., Kansas City
Ginsberg, Norman A., Kansas City
Gish, Rutledge, Fulton
Gist, William W., Kansas City
Gitt, Joseph J., St. Louis
Gladney, John H., St. Louis
Glascock, Donald W., Palmyra
Glass, Robert L., Sedalia
Glass, William J., Jr., Monett
Glassberg, Bertrand Y., St. Louis
Glasscock, Ernest L., Kansas City
Glenn, Elmer E., Forsyth
Glenn, Robert R., Springfield
Glennon, William P., St. Louis
Glick, Harry N., St. Louis
Glover, Kenneth, Mt. Vernon
Gnade, Albert J., St. Louis
Goebel, Joan M., St. Louis
Goell, Robert S., St. Louis
Goldberg, Isadore E., Braymer
Goldenberg, Sidney, St. Louis
Goldenson, Max J., St. Louis
Goldfarb, Alvin, St. Louis
Goldkamp, John D., St. Charles
Goldman, Alfred, St. Louis
Goldman, Arnold M., St. Louis
Goldman, Hyman J., St. Louis
Goldman, Melvin L., St. Louis
Goldman, Stanley L., Kansas City
Goldner, John C., Columbia
Goldsich, Edward, Kansas City
Goldstein, Bernard, St. Louis
Goldstein, Marcy A., St. Louis
Goldstein, Marvin F., Kansas City
Gollub, Samuel W., St. Louis
Gomez, Cesar A., Jr., St. Louis
Gonser, Karl B., Sedalia
Gonzalez, M. Garza, Warrensburg
Goodman, J. N., Glendale
Goodman, LeRoy, Kansas City
Goodman, Nathaniel, St. Louis
Goodrich, Harold A., Webster Groves
Goodson, William H., Jr., Kansas City
Goolsbee, Robert L., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Gordon, James S., Jefferson City
Gordon, Morris P., Kansas City
Gorelick, David F., Springfield
Gorla, Wayne O., St. Louis
Gorrell, Ned B., Grandview
Gose, Don F., Springfield
Gottsch, Joseph C., Prairie Village, Kan. (Member Jackson County Medical Society)
Goyer, Robert A., St. Louis
Grabau, Gene H., St. Louis
Grable, James D., Portageville
Grabske, Charles F., Independence
Grabske, Charles F., Jr., Independence
Graeser, Richard G., Kirkwood
Graham, James W., Kansas City
Graham, Wallace H., Kansas City
Graneto, Joseph A., St. Louis
Grant, Albert J., Hannibal
Grant, Claude S., St. Joseph
Grant, John M., St. Louis
Grant, Neville, St. Louis
Grant, Phyllis L., St. Joseph
Grant, Samuel B., St. Louis
Grauerholz, James W., Kansas City
Graul, Elmer G., St. Louis
Graul, Walter P., St. Louis
Graves, Arthur J., Mt. Vernon
Graves, F. Burton, Joplin
Gray, Walter C., St. Louis
Greaney, John F., St. Louis
Grebel, Clement B., St. Louis
Greditzer, Arthur S., St. Louis
Green, D. M., St. Louis
Green, J. Richard, Independence
Green, Manuel E., St. Louis
Green, Stanley L., Independence
Green, William R., St. Louis
Greenberg, Charles, Los Angeles, Calif. (Member Buchanan County Medical Society)
Greene, Harry L., Hannibal
Greene, W. Wallace, Kansas City
Greenman, Marshall B., Clayton
Gregory, Ralph W., Kansas City
Gresick, Robert J., St. Louis
Griege, Charles W., Florissant
Griffin, Evelyn, Buffalo
Griffin, Olin A., Jr., Buffalo
Griffin, William T., Columbia
Griffith, John A., Jr., Kansas City
Griffith, John K., Koch
Griggs, James Y., St. Louis
Grim, Edward M., Kirksville
Grimes, Manning E., St. Joseph
Grindon, Joseph B., St. Louis
Griot, Albert J., St. Louis
Groce, George, Fulton
Grogan, Frank M., St. Louis
Gronau, Axel R., St. Louis
Grossman, Marvin, Fredericktown
Grove, Gulp W., Knobnoster
Growdon, John A., Kansas City
Grubb, Paul H., Joplin
Grueb, Paul M., St. Louis
Gruenfeld, Gerhard E., St. Louis
Grunberg, Emile, St. Louis
Grundmann, William H., St. Louis
Guastello, Mario J., Kansas City
Gubin, Alan S., Caruthersville
Guccione, Joseph B., St. Louis
Guffey, Don C., Kansas City
Guhleman, Henry V., Jr., Jefferson City
Guldner, Edmond, Lamar
Gulick, Charles R., St. Louis
Gullett, Charles C., Kansas City
Gum, William R., St. Louis
Gummels, Belmont B., St. Louis

Gundle, Sigmund, Kansas City
Gunn, Jack, Versailles
Gunn, Richard W., Kansas City
Gunn, Walter T., St. Louis
Gunter, Joe S., St. Joseph
Gurnee, Landon H., Jefferson City
Guze, Samuel B., St. Louis
Gzell, Ronald, St. Louis

H

Hackett, Paul R., St. Louis
Hackmeyer, Rubin, St. Louis
Haddock, James N., Webster Groves
Haffner, Heinz, St. Louis
Hagan, Daniel J., St. Louis
Hagebusch, Omer E., St. Louis
Hagemann, Paul O., St. Louis
Haggen, Margaret E., Kansas City
Hahn, Andrew L., Springfield
Haight, John M., Kansas City
Haith, Edward E., Kansas City
Haith, Walter F., Kansas City
Hall, Andy, Jr., St. Louis
Hall, David G., Columbia
Hall, David W., Springfield
Hall, Durward G., Springfield
Hall, Eugene W., Ferguson
Hall, Frank W., Cape Girardeau
Hall, James W., Kansas City
Hall, Lee A., Clayton
Hall, Marvin F., Joplin
Hall, Preston C., St. Louis
Hall, Ralph R., Kansas City
Hall, Robert A., St. Louis
Hall, Thomas B., Kansas City
Hall, William K., St. Louis
Halperin, Phillip H., Kansas City
Halpern, Lawrence K., St. Louis
Hamel, Herbert A., Kansas City
Hamill, Robert W., Kansas City
Hamilton, Caldwell K., Clayton
Hamilton, Eugene G., Clayton
Hamilton, Eugene H., Joplin
Hamilton, William P., Aurora
Hamlin, Wyeth, Hannibal
Hammes, Romar E., St. Charles
Hammler, Christiana V., St. James
Hammond, John J., St. Louis
Hampton, Henry E., St. Louis
Hampton, Oscar P., Jr., St. Louis
Hampton, Stanley F., St. Louis
Hanan, Ernest B., Springfield
Handler, Eric, St. Joseph
Handler, Fred P., Jefferson City
Hanes, Lee D., Kansas City
Hanes, Robert L., Kansas City
Hankin, Norman M., St. Louis
Hanlon, C. Rollins, St. Louis
Hanlon, Russell C., St. Charles
Hanna, Richard E., St. Louis
Hannas, Raymond R., Kansas City
Hansbrough, Eugene T., Poplar Bluff
Hansel, French K., St. Louis
Hansen, Arthur L., Butler
Hanser, S. Albert, St. Louis
Hanser, Theodore H., St. Louis
Hanss, Armand W., Springfield
Hardacre, Ruth A., Kansas City
Hardin, William B., Jr., Madison, Wis. (Member St. Louis Medical Society)
Hardwicke, Henry M., Ashland
Hardy, Guerdan, Clayton
Hardy, Henry M., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Hardy, John W., Kansas City
Hardy, Joseph A., Jr., St. Louis
Hardy, Samuel W., St. Louis
Hardy, Stanton L., Desloge
Harell, Alex, St. Louis
Harford, Carl G., St. Louis
Harkins, William B., St. Louis
Harkness, Harry, Warrensburg
Harland, Robert E., Ironton
Harless, Morris S., Kansas City
Harlow, Lloyd M., Kansas City
Harmon, Ben C., St. Louis
Harms, Florian L., Salisbury
Harned, Bert W., Kansas City
Harner, Casper G., St. Joseph
Harper, Fleming B., St. Louis
Harrell, Henry J., Belleview, Fla. (Member Dallas-Hickory-Polk County Medical Society)
Harris, A. Basil, St. Louis
Harris, Boyd L., San Diego, Calif. (Member Jackson County Medical Society)
Harris, Charles W., St. Louis
Harris, Hinman A., University City
Harris, Robert J., Columbia
Harris, Solon P., St. Louis
Harrison, Lee B., St. Louis
Harrison, Stanley L., Evanston, Ill. (Member St. Louis County Medical Society)
Hart, L. Wayne, Kansas City
Hart, Martin M., Salem
Harting, Hugh R., St. Louis
Hartley, L. Howard, Springfield
Hartman, Paul T., St. Louis
Hartnett, Leo J., St. Louis
Hartstein, Jack, University City
Hartwig, Frederick H., Kansas City
Hartwig, John A., St. Louis
Hartwig, Raymond W., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Harvey, Harold D., Springfield
Harwell, J. Larry, St. Louis
Harwell, J. Lester, St. Louis (Member Butler-Wayne-Ripley County Medical Society)
Hasek, James A., Cabool
Hasenmueller, James J., St. Louis
Hash, Emalyn, H., Kansas City
Hashinger, Edward H., La Jolla, Calif. (Member Jackson County Medical Society)
Hasselblad, Oliver W., New York (Member North Central Counties Medical Society)
Hasson, Jack, St. Louis
Hasson, Robert, Moberly
Hata, Daikichi, Boonville
Hatfalvi, Bela I., St. Louis
Haun, Cosmo L., Columbia
Hauptmann, William L., St. Louis
Hausheer, Herman J., Independence
Haw, Marvin T., Jr., Columbia (Member Mineral Area County Medical Society)
Hawk, Bray O., St. Louis
Hawker, William D., St. Louis
Hawkins, George L., Jr., St. Louis
Hawkins, Lee W., Chesterfield
Hayden, Loyola F., St. Louis
Hayek, Wesley E., St. Louis
Hayes, Lawrence L., Kansas City
Hayes, Paul W., St. Joseph
Haynes, James W., St. Louis
Haynes, Pugh, Jr., St. Louis
Haynes, Robert C., Marshall
Haynes, Solon E., Kansas City
Haynie, William W., Butler
Hazen, Robert M., Kansas City
H'Doubler, Charles E., Springfield
H'Doubler, Francis T., Jr., Springfield
H'Doubler, Peter B., Springfield
Headrick, John A., St. Louis
Hecker, Joseph E., Poplar Bluff
Hedges, Richard C., Excelsior Springs
Heeb, Max A., Sikeston
Heideman, Alvah G., St. Louis
Heideman, Milo L., St. Louis
Heidenreich, Harry L., St. Louis
Heifetz, Carl J., St. Louis
Heilman, Edward J., Kansas City, Kan. (Member Jackson County Medical Society)
Hein, Paul A., Jr., St. Louis
Heinbecker, Peter, St. Louis
Helbing, Edward J., St. Louis
Heller, B. Marcus, Kansas City
Hellerstein, Stanley, Kansas City
Hellweg, Charles E., Mt. Vernon
Hellweg, Raymond W., St. Louis
Helm, James O., New Florence
Helman, Richard G., Kansas City
Hemenway, William G., Columbia
Henderlite, John W., St. Louis
Hendin, Aaron, Olivette
Hendren, Glenn W., Liberty
Hengen, Henry E., Bridgeton
Henke, Charles F., St. Louis
Hennelly, John J., St. Louis
Henrickson, Hardin O., Poplar Bluff
Henry, Clarke L., Kansas City
Henry, Schubert D., Kansas City
Henschel, Eugene V., St. Louis
Hensley, Daniel R., Lilbourn
Herbert, Charles T., Cape Girardeau
Herman, Allen I., St. Joseph
Herman, Morris, St. Louis
Hernandez, Salvadore, St. Louis
Herrick, Harold C., La Grange
Herrman, George V., Kansas City
Hertel, Ronald C., St. Louis
Hetlage, Louis P., Troy
Heusler, Anton F., St. Louis
Heutel, Lee B., Union
Heyer, Oscar C., St. Louis
Hibbard, Blaine Z., Kansas City
Hickerson, William H., Independence
Hickey, James L., St. Louis
Hickey, Robert F., St. Louis
Hicks, Robert S., St. Louis
Higgins, John W., St. Louis
Higgins, Philip C., St. Louis
Higgins, Robert S., Kansas City
Hilbert, Paul H., St. Louis
Hildreth, H. Rommel, St. Louis
Hill, Jack H., Kansas City
Hill, James E., Fulton
Hilliard, Alphonso W., St. Louis
Hilton, Paul E., Kirksville
Hinds, R. David, Hannibal
Hink, Frederick W., Independence
Hirsch, Joe E., Kansas City
Hoadley, William D., Kansas City
Hoard, Joseph W., Webster Groves
Hobart, Carl A., St. Louis
Hobbs, Earl B., Smithville
Hobbs, John E., St. Louis
Hoctor, Emmett F., Farmington
Hodge, Robert H., N. Kansas City
Hodges, Fred J., III, St. Louis
Hodgson, Frank H., Kansas City
Hoelscher, Harold F., Warrenton
Hoenig, Hector F., Jr., Bethany
Hoeper, Samuel D., Grandview
Hoffman, Jacob S., Kansas City
Hoffmann, Augustin D., St. Louis
Hoffmann, R. Lee, Kansas City
Hoffmann, Ronald E., St. Louis
Hofsommer, Armin C., Webster Groves
Hofstatter, Leopold, St. Louis
Hofstatter, Lilli, St. Louis
Hogan, Daniel F., Manhattan, Kan. (Member Jackson County Medical Society)
Hogan, John R., St. Louis
Hogan, Patrick C., St. Louis
Hogancamp, Charles E., St. Louis
Hogancamp, Glenn E., Ballwin
Hogeboom, George W., Delray Beach, Fla. (Member Greene County Medical Society)
Hogue, Frank S., Kansas City
Holbrook, Charles K., St. Louis
Holcomb, John K., Cape Girardeau
Holemon, R. Eugene, St. Louis
Holley, Donald B., Camdenton (Member Mid-Missouri County Medical Society)
Hollingsworth, Ray S., Clinton
Hollis, Richard W., Springfield
Hollo, Vencel W., St. Louis
Hollweg, Kenneth C., Kansas City
Holmes, Daniel E., Springfield
Holmes, David R., Springfield
Holscher, Edward C., St. Louis
Holt, Earl P., Jr., St. Louis
Holt, Waldo S., Kansas City
Holt, William E., St. Louis
Holton, Edward B., Independence
Holtz, Alan S., St. Louis
Holtz, Sumner, St. Louis
Holtzman, Samuel, Joplin
Homan, Joseph S., St. Louis
Hook, Waller G., Kansas City
Hoover, Bernard L., St. Louis
Hoover, H. Lee, Jr., Springfield
Hope, James L., Lebanon
Hopkins, Florian G., Gideon
Hopkins, Thomas J., Sedalia
Hopkins, T. Spencer, Sedalia
Hornback, Edward R., Joplin
Horner, Glennon A., Marceline
Horner, John L., St. Louis
Hornstra, Robijn K., Kansas City
Horst, Otto C., Springfield
Horton, James D., Springfield
Horwitz, Irwin B., St. Louis
Hosto, Leland E., St. Louis
Houck, Russell M., Kecoughtan, Va. (Member Clay County Medical Society)
Houston, Vincent T., St. Louis
Howden, Thomas L., St. Joseph
Howe, Albert L., St. Louis
Howe, Louis F., St. Louis
Howell, Billy D., Brookfield
Hoxworth, Gerald M., Cape Girardeau
Huber, Erwin T., St. Louis
Huber, K. Herbert, Richmond
Huber, Lasley E., Moberly
Huck, Frank F., Fenton
Huck, Richard F., St. Louis
Huckstep, Robert A., Farmington

Hudgens, Richard W., St. Louis
Huggins, Albert M., St. Louis
Hughes, Gerald E., Kansas City
Hughes, Judson M., Fulton
(Member Buchanan County Medical Society)
Hughes, Robert G., St. Louis
Hughes, Shelby B., Clinton
Hulbert, Bernard, St. Louis
Hulstra, Johannes F. W., Springfield
Hummel, Anton J., St. Louis
Hummel, William C., St. Louis
Humphrey, George E., Santa Fe, N. M.
(Member St. Louis Medical Society)
Humphrey, James, Mound City
Humphreys, Edward T., Boonville
Hungate, Carroll P., Kansas City
Hunleth, Frank E., St. Louis
Hunt, Claude J., Kansas City
Hunt, John W., Jr., Farmington
Hunt, Lloyd H., Salem
Hunt, Thomas R., Kansas City
Hunt, William J., St. Joseph
Hunter, Martin P., Kansas City
Hunzicker, Warren J., Kansas City
Hurst, Ben B., Lebanon
Hurst, Wilfred W., Joplin
Hurwitt, Frank, Kansas City
Hustead, Robert F., Leawood, Kan.
(Member Jackson County Medical Society)
Husted, George W., Parma
Hutchinson, James H., Jr., St. Louis
Hutchinson, William B., St. Louis
Hutto, A. Herman, St. Louis
Hyde, Lawrence L., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Hyman, Anna, St. Louis
Hyndman, Charles E., St. Louis

I

Ide, Carl H., Kansas City
Ide, Lucien W., St. Joseph
Imes, Elvin D., Maryville
Ingham, Walton C., Kansas City
Inkley, John J., St. Louis
Irick, Carl C., Naples, Fla.
(Member St. Louis County Medical Society)
Irvin, William M., St. Louis
Irwig, Fred, Kansas City
Isbell, Charles H., Carthage
Isom, Waldo B., Knox City
Israel, Milton R., St. Louis
Ittner, George W., Jr., St. Louis
Ivy, Henry B., Springfield
Izmirlian, Grant, St. Louis

J

Jabczenski, Felix F., Tucson, Ariz.
(Member St. Louis Medical Society)
Jackson, Edward K., Clarksville
Jackson, Haywood R., Kansas City
Jackson, Robert L., Columbia
Jackson, Vernon B., Fulton
Jackson, William R., Kansas City
Jackson, William R., Maryville
Jacob, Walter P., Kansas City
Jacobs, Charles C., St. Louis
Jacobs, David S., Kansas City
Jacobs, Frederick A., St. Louis
Jacobs, Morton, Kansas City
Jacobs, Walter H., Kansas City
Jacobsohn, Warren Z., St. Louis
Jaeger, Joseph N., Jackson
Jaime, Nicholas, Kansas City
James, Norman A., St. Louis
James, Otis E., Jr., Kansas City
Jameson, James E., Springfield
Janney, James G., Jr., Clayton
Jansen, Robert, Kansas City
Jarvis, James A., Kansas City
Jaudon, Joseph C., Clayton
Javaux, Everett J., St. Louis
Jean, J. Ted, St. Louis
Jeans, Virgil, Joplin
Jenab, Morteza, Kansas City
Jennett, James H., Kansas City
Jensen, Joshua E., St. Louis
Jick, Sidney, St. Louis
Jimenez, Jose, St. Louis
Joffe, Irwin, Paragould, Ark.
(Member Dunklin County Medical Society)
Johnson, Alan G., St. Louis
Johnson, C. Laurence, Kansas City
Johnson, Charles S., Warrensburg
Johnson, Earl W., Cape Girardeau
Johnson, George A., Springfield
Johnson, George L., Ft. Benning, Ga.
(Member Greene County Medical Society)
Johnson, Grover C., Marthasville
Johnson, James S., Kansas City
Johnson, Joseph E., Kansas City
Johnson, Maurice N., St. Louis
Johnson, Mitchell D., Ferguson
Johnson, Morris B., Grandview
Johnson, Roy, Ferguson
Johnson, Richard E., Columbia
Johnson, Thomas M., Kansas City
Johnson, Warford B., Springfield
Johnson, William A., Kansas City
Johnson, William F., Springfield
Johnston, Joseph L., Springfield
Johnstone, John, Jr., Kirkwood
Johnstone, Paul N., Kansas City
Jolly, Benjamin N., Mexico
Jolly, William H., Mexico
Jonas, Harry S., Jr., Independence
Jones, Andrew B., St. Louis
Jones, Augustin, St. Louis
Jones, Dorothy J., St. Louis
Jones, Edna M., Clinton
Jones, Edward S., Harrisonville
Jones, George H., Kansas City
Jones, Grey, St. Louis
Jones, James B., St. Louis
Jones, James H., St. Louis
Jones, John B., Kirksville
Jones, Keith D., Warrensburg
Jones, Marion E., Kansas City
Jones, Otey S., St. Louis
Jones, Richard A., St. Louis
Jones, Theodore R., Kansas City
Jones, Victor, Brentwood
Jones, Vincent L., St. Louis
Jordan, Edward J., St. Louis
Jordan, Walter R., Barnhart
(Member St. Louis Medical Society)
Jorel, Louis E., Springfield
Jorstad, Louis H., St. Louis
Joseph, Harold J., Ladue
Joslyn, Harold L., St. Louis
Jost, Charles A., St. Louis
Jotte, Richard F., St. Ann
Juden, Alexander G., Cape Girardeau
Judge, Walter T., Crystal City
Judy, Joseph D., Ferguson
Jung, J. Marshall, Illmo
Justus, John B., Kansas City

K

Kahn, Lawrence, St. Louis
Kahn, Marvin, Kansas City
Kaiser, George C., St. Louis
Kallenbach, Glen P., Mexico
Kamada, Tsutomu, St. Charles
Kamakas, Nicholas, St. Louis
Kaminsky, Watson W., St. Louis
Kamuran, Ozgoncu, St. Louis
Kanagowa, Hajime H., Jefferson City
Kanarek, Joseph, Kansas City
Kane, Clyde E., St. Louis
Kantor, Julius M., Kansas City
Kantor, Samuel, Kansas City
Kaplan, Albert, St. Louis
Kappesser, Netajean B., St. Louis
Kappesser, Roland C., St. Louis
Karandjeff, Apostle D., St. Louis
Kardesch, Milton, St. Louis
Karl, Michael M., St. Louis
Karraker, Alvan G., Farmington
Karsh, Robert S., St. Louis
Kartus, Irving, Kansas City
Kaskie, Clifford R., Clayton
Kasten, Melvin C., Cape Girardeau
Katz, Milton, Kansas City
Kauffman, Ruth, Versailles
Kaufmann, Herbert H., Kansas City
Kaul, Philip G., Kansas City
Kayes, Jack, St. Louis
Keairnes, Harold W., Independence
Kealhofer, George C., Kansas City
Keeble, Charles B., St. Louis
Keeler, James E., Kansas City
Keenoy, John J., St. Louis
Keffler, Karl L., St. Louis
Kehoe, John J., St. Louis
Keim, John H., Cape Girardeau
Keller, Louis, St. Louis
Keller, Maurice J., St. Louis
Keller, Robert M., Wentzville
Kellett, John G., Webster Groves
Kelley, Gilbert B., Savannah
Kelley, Ralph R., Savannah
Kelley, Robert W., St. Louis
Kelling, Douglas G., Waverly
Kelling, Jordan, Waverly
Kelly, Eugene H., Ironton
Kelly, Marshall W., Jefferson City
Kelly, R. Emmet, St. Louis
Kelsey, Kenneth L., Aurora
Keltner, Raymond M., Jr., St. Louis
Kendall, Charles A., Independence
Kendall, Forrest H., Washington, D. C.
(Member Jackson County Medical Society)
Kendig, John H., St. Louis
Kendis, Joseph B., St. Louis
Kennard, George K., Kansas City
Kenney, Roy E., Neosho
Kent, Bela K., Kansas City
Kent, Clifford F., Kansas City
Keown, Kenneth K., Columbia
Kepler, Earl C., Fulton
Kernodle, Jefferson D., Kansas City
Kerr, David N., St. Louis
Kerr, Frank T., Monett
Kessler, Joseph J., St. Louis
Kessler, Sheldon, Florissant
Ketcham, William M., Kansas City
Ketterman, Grace H., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Ketterman, Herbert L., Kansas City
Kettner, Edward G., Kansas City
Key, James S., Springfield
Keyes, Edward L., Clayton
Kibbe, Edgar A., California
Kieber, Robert W., St. Joseph
Kieffer, Roland S., St. Louis
Kieffer, Victor B., Jr., St. Louis
Kienberger, Paul A., Independence
Kiene, Richard H., Kansas City
Kienzle, Edward C., St. Louis
Kilker, Clarence H., St. Louis
Kilker, Donald E., St. Louis
Kilo, Charles, St. Louis
Kimball, I. W., Kansas City
(Member Platte County Medical Society)
Kimball, Merritt H., Kansas City
Kimberlin, Herbert C., Trenton
Kimelman, Nathan, St. Louis
Kimes, Ira D., Cameron
Kinder, James A., Cape Girardeau
King, Elbert R., Boise, Idaho
(Member West Central Counties Medical Society)
King, Eustace E., III, St. Louis
King, Francis C., Kirkwood
King, J. Tenbrook, Kansas City
King, James P., St. Louis
King, John V., Webster Groves
King, Lucy J., St. Louis
King, Morris K., St. Louis
King, Phillip E., Liberty
King, Richard H., Clinton
King, Walter R., Kansas City
Kingsbury, Helen, Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Kingsland, Robert C., Clayton
Kinsella, Edward D., St. Louis
Kinsella, Peter W., St. Louis
Kinsella, Ralph A., St. Louis
Kinsella, Ralph A., Jr., St. Louis
Kipnis, David M., St. Louis
Kirschman, Robert E., Joplin
Kirstein, Melvin B., St. Louis
Kirtz, Louis P., St. Louis
Kiser, David M., Kansas City
Kissane, John M., St. Louis
Kister, George E., St. Charles
Kistner, William F., St. Louis
Kitchen, William M., Kansas City
Klaff, Daniel D., St. Louis
Klebba, Larry B., Jefferson City
Klein, Andrew G., St. Louis
Klein, Arnold G., St. Louis
Klein, Bert H., St. Louis
Klein, Edward H., Kansas City
Klein, Saul J., St. Louis
Kleinschmidt, Clinton, St. Louis
Klenk, Charles L., St. Louis
Klepinger, Dayton P., Neosho
Kline, Carlyn M., St. Joseph
Kline, Edmund W., St. Joseph
Klinge, Frederick W., St. Louis
Klingner, George M., Springfield
Klinkerfuss, George H., St. Louis
Klippel, Allen P., Clayton
Klippel, Bernhardt W., St. Louis
Kloecker, Herman J., St. Louis

Kloecker, Richard J., St. Louis
Kloecker, Robert P., St. Louis
Klym, Nicholas, St. Louis
Knabb, Arthur D., Springfield
Knabb, Harris, Springfield
Knabb, Henry F., Jr., Springfield
Knabb, Kenneth E., Springfield
Kneal, E. Ellsworth, St. Louis
Kneibert, Fred L., Poplar Bluff
Knepper, Paul A., St. Joseph
Knese, Luke A., St. Louis
Knight, Franklin P., St. Louis
Knight, John S., Kansas City
Knight, Lyle B., Lee's Summit
Knight, William A., Jr., St. Louis
Knipschild, Bedford F., Marshall
Knoch, H. Kermit, Kansas City
Knock, Henry L., Kirkwood
Knoke, Frederick W., Jr., Belleville, Ill.
(Member Buchanan County Medical Society)
Knowlton, Norman P., Jr., St. Louis
Knox, Earl R., Kansas City
Koch, Robert E., Clayton
Koehler, Charles A., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Koehler, George A., St. Louis
Koehler, John W., Joplin
Koenig, Marvin I., St. Louis
Koerner, Kenneth A., St. Louis
Koessel, Arthur W., St. Louis
Kohler, Eugene J., St. Louis
Kohler, Louis H., St. Louis
Kolze, Vernon W., Springfield
Komanetsky, William M., St. Louis
Konikov, Nadya, St. Louis
Konzelmann, John A., St. Louis
Koon, Ben H., Bolivar
Kopp, Jules H., St. Louis
Kopp, Leonard J., St. Louis
Koppenbrink, Walter E., Jr., Higginsville
Korn, Robert L., Clayton
Korth, William M., Kansas City
Kotner, Lawrence M., St. Louis
Koutsoumpas, William V., St. Louis
Kovac, Albert P., Kansas City
Kowert, Edward H., St. Louis
Kozal, Francis L., Crystal City
Kozlowski, Albert E., St. Louis
Kraft, Edward O., Brentwood
Kraft, Jacob, Kansas City
Kramer, Fred, St. Louis
Kramolowsky, Helmuth H., St. Louis
Kraner, Justin F., St. Louis
Kranson, Seymour J., Independence
Kratz, Frederick W., Liberty
Kratz, Paul E., Cape Girardeau
Krause, G. Lynn, Jr., St. Louis
Krause, Richard M., St. Louis
Krebs, Joseph M., Clayton
Krieger, John L., St. Louis
Krojanker, Rolf, St. Louis
Kromer, Charles, St. Louis
Kubin, Milford T., Columbia
Kubitschek, Paul F., St. Louis
Kuebrich, Thomas C., Ferguson
Kuenzi, Donald E., Kansas City
Kuhlman, Robert E., St. Louis
Kuhn, John R., Jr., Joplin
Kuhn, William F., II, Kansas City
Kulowski, Jacob, St. Joseph
Kurth, Robert K., St. Louis
Kurz, Rudolph F., St. Louis
Kutryb, Walter J., St. Louis
Kuttner, Marianne, St. Louis
Kyger, Fred B., Kansas City
Kyger, John E., Independence
Kyner, Thos. A., Kansas City

L

Lachance, Leopold, Centralia
Ladd, Charles B., St. Louis
Ladenson, Roland P., Columbia
LaDriere, Raymond J., St. Louis
Laffoon, France L., Vista, Calif.
(Member Jackson County Medical (Society)
Laffoon, Robert G., Lafayette, La.
(Member Cape Girardeau County Medical Society)
LaHue, Lilburn D., Butler
LaHue, William C., Lexington
Lally, James J., Kansas City
Lam, Robert L., St. Louis
Lamar, Robert F., Kansas City
Lamb, Wanda, St. Louis
Lambert, Marian, Kansas City
Lambie, Rodger W., Kansas City
Lamy, John E., Sedalia
Landau, Daniel B., Hannibal
Landau, William M., St. Louis
Landis, George K., Kansas City
Landor, John H., Columbia
Lane, Clinton W., St. Louis
Lane, Daniel K., St. Louis
Laney, Roland L., Carlsbad, Calif.
(Member Jasper County Medical society)
Lang, John J., St. Louis
Langan, William J., Jr., St. Louis
Lange, Adolph C., St. Louis
Langeluttig, Harry V., Mt. Vernon
Langhus, Melvin O., N. Kansas City
Langston, Walter R., Springfield
Lanier, Earl W., St. Louis
Lankford, Harold D., Mexico
Lanning, Richard C., Ste. Genevieve
Lanning, Robert J., Hannibal
Lansche, Elmer A., St. Louis
Lansche, W. Edward, St. Louis
Lapi, Angelo, Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Lapp, Harry C., Kansas City
Larimore, Joseph W., St. Louis
Larkin, Rosemary R., St. Louis
Larsen, Kenneth V., St. Louis
Larson, Paul U., St. Louis
Lassar, Gilbert N., St. Louis
Latham, Kenyon S., California
Latham, Raymond W., Kansas City
Latimer, Walter N. A., Hannibal
Lattinville, Henry E., St. Louis
Lauber, Joseph J., St. Louis
Lauer, Daniel J., Kansas City
Lauer, John D., St. Louis
Laurenzana, Frank P., Kansas City
Lawrence, George H., St. Louis
Lawrence, John R., Marshall
Lawton, John T., St. Louis
Lawton, Lawrence M., St. Louis
Lawton, Thomas P., St. Louis
Layton, Ira C., Kansas City
Leahy, John G., St. Louis
LeBlanc, Leo J., St. Louis
L'Ecuyer, Jerome L., St. Louis
Lederer, Charles M., Warrensburg
Lederman, Joseph, St. Louis
Lee, Carleton H., St. Joseph
Lee, George C., Kansas City
Lee, Henry A., Kansas City
Leech, Charles A., Columbia
Leech, Maurice P., Fayette
Leeper, Sidlee W., Columbia
Legner, Stanley G., Perryville
Lehner, Richard L., Kansas City
Leider, Robert J., Chicago, Ill.
(Member St. Louis Medical Society)
Leidinger, Karl J., Republic
Leifer, William W., Kansas City
Leightner, William, St. Louis
Leitch, Cecil G., Blue Springs
Leitch, David A., Kansas City
Leitz, Frank B., Kansas City
Lembeck, Joseph A., St. Louis
Lemmon, George B., Springfield
Lemmon, G. Bruce, Jr., Springfield
Lenobel, Milton I., Clayton
Lentz, Clark H., Kansas City
Lentz, Harold C., Neosho
Leo, William A., Kansas City
Leonhardt, Erwin M., St. Louis
Lerwick, Everett R., St. Louis
Leslie, Charles H., Kirkwood
Leslie, James F., Springfield
Leslie, J. Paul, Jefferson City
Leslie, James T., Louisville, Ky.
(Member Cole County Medical Society)
Leslie, James T., Jr., Jefferson City
Levey, Harry B., Kansas City
Levey, Simon A., Overland
Levin, Marvin E., St. Louis
Levin, Sidney S., St. Louis
Levitt, Joseph, St. Louis
Levy, Irwin, St. Louis
Levy, Jerome F., St. Louis
Lewellen, Charles H., Louisiana
Lewin, Wilbur H., St. Louis
Lewis, Albert G., Platte City
Lewis, Charles R., St. Louis
Lewis, James E., Jr., St. Louis
Lewis, Noel R., Springfield
Lewis, Ray B., Columbia
Lewis, Revis C., Kansas City
Leydig, Stanley M., St. Louis
Liang, Howard S., St. Louis
Lichtor, Alexander, Kansas City
Lichtor, Joseph M., Kansas City
Lichty, Charles A., Shelbina
Lieb, Francis X., St. Louis
Lieb, Otto, St. Louis
Lieberman, B. Albert, Jr., Kansas City
Lieberman, David M., St. Louis
Liebmann, Fritz M., St. Louis
Liese, Grover B., St. Louis
Lilly, Douglas R., St. Louis
Lilly, Terry E., Kansas City
Lilly, Terry E., Jr., Kansas City
Limbaugh, Walter R., Hayti
Lindeman, Carl H., St. Louis
Lindquist, Carl N., Kansas City
Link, Alexander J., St. Louis
Link, Vance E., Independence
Linsenmeyer, Charles M., St. Charles
Linville, Howard E., Kansas City
Lipschitz, Ervin, St. Louis
Lipsitz, Ellis S., St. Louis
Lischer, Carl E., St. Louis
Lissner, Arthur B., St. Louis
Liston, Odus, Oakgrove
Little, Monroe H., St. Louis
Littmann, Lewis E., St. Louis
Litton, Lyle D., Springfield
Litwiller, R. W., Columbia
Litzow, Louis T., St. Louis
Lloyd, Ivan E., Independence
Lockhart, Charles E., Springfield
Lodwick, Gwilym S., Columbia
Loeb, Virgil, Jr., St. Louis
Loeffel, Ellen S., St. Louis
Loesch, Junior J., St. Louis
Logan, James A., Warsaw
Logue, John T., Columbia
Lohmar, Roland E., Columbia
Lohr, Curtis H., St. Louis
Lohr, Robert W., Ferguson
Lohrentz, Lois H., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Loitman, Bernard, St. Louis
Londe, Sol, St. Louis
London, Stanley L., St. Louis
Lonergan, Warren M., St. Louis
Long, Curtis W., Butler
Long, David S., Harrisonville
Long, Forrest C., Savannah
Long, Frank B., St. Louis
Long, R. Stacy, Kansas City
Longenecker, Joe L., Joplin
Lonsway, Maurice J., St. Louis
Lonsway, Maurice J., Jr., St. Louis
LoPiccolo, Vincent J., St. Louis
LoPiccolo, Vincent J., Jr., St. Louis
Lord, Richard E., St. Louis
Lorenc, Ernest, Springfield
Lottes, James O., St. Louis
Loughead, John R., Poplar Bluff
Love, Walter S., Nevada
Loving, B. Rush, Ballwin
Lovinggood, Thomas A., Cape Girardeau
Lowe, Alvin L., Sedalia
Lowe, Horace A., Jr., Springfield
Lowell, Paul, Kansas City
Lowenstein, Paul S., St. Louis
Lowney, John F., Columbia
Lowrey, Ford J., Kansas City
Loyd, Earl L., Jefferson City
Lucas, Fred V., Columbia
Lucas, G. Elden, St. Louis
Lucido, Joseph L., St. Louis
Lucke, Eugene M., Hannibal
Luckenbill, Paul T., Plattsburg
Luedde, Fullerton W., St. Louis
Luedde, Philip S., St. Louis
Luehrs, Robert O., St. Louis
Lugo, Samuel, St. Louis
Luh, Andrew, St. Louis
Luke, Herbert K., St. Louis
Lund, Herluf G., St. Louis
Lund, Robert H., Clayton
Lundgren, Fred H., Jr., Kansas City
Lurie, Harold H., Springfield
Lusk, Charles A., Jr., Butler
Luten, Drew W., St. Louis
Luter, Carter W., Butler
Luther, George A., St. Louis
Lutkewitte, Joseph F., Ste. Genevieve
Lutz, Martin H., St. Louis
Lyddon, Harold R., Jr., Kansas City
Lyle, Robert R., Versailles
Lyman, Edward H., St. Louis
Lynxwiler, Chester P., St. Louis
Lyss, Carl, St. Louis
Lytle, William R., Rolla
Lyttle, Garnet C., St. Louis
Lytton, George J., Kansas City
Lytton, William B., St. Louis

Mc

McAdam, Charles R., St. Louis
McAfee, C. Alan, St. Louis
McAlhany, Howard J., Springfield
McAlister, William H., St. Louis
McArtor, Thomas R., Browning
McBurney, Alexander A., Hanover, N. H.
(Member Saline County Medical Society)
McBurney, Charles A., Slater
McCall, Edwin L., St. Louis
McCalla, John P., Kansas City
McCallum, Andrew J. C., Aurora
McCann, John F., St. Louis
McCann, Louis P., Nevada
McCanse, Andrew, Kansas City
McCarroll, Henry R., St. Louis
McCarthy, John M., St. Louis
McCarthy, Thomas D., Ferguson
McCarthy, William F., Blue Springs
McCaughan, John M., St. Louis
McClanahan, Robert C., Kansas City
McCloskey, R. Bruce, Webster Groves
McClure, David N., Clayton
McClure, James N., Jr., St. Louis
McClure, Thomas C., Fort Lauderdale, Fla.
(Member SEMO County Medical Society)
McCool, James F., Jr., St. Louis
McCool, Stanley G., St. Louis
McConchie, James E., Independence
McCorkle, E. Lee, Marshall
McCormick, James E., Kansas City
McCoy, Frederick J., Kansas City
McCoy, Warren R., Caruthersville
McCracken, Samuel R., Excelsior Springs
McCraw, Doyle C., Bolivar
McCubbin, Clarence R., Leawood, Kan.
(Member Jackson County Medical Society)
McCullough, Campbell C., Kansas City
McCuniff, William B., Kansas City
McDaniel, John R., St. Joseph
McDermott, Alfred E., Perryville
McDonald, Bruce P., Kansas City
McDonald, Eugene F., Jackson
McDonald, George H., St. Louis
McDonald, Victor G., Jr., Cleveland, Ohio
(Member Jackson County Medical Society)
McDonald, Wilbur P., St. Joseph
McDonnell, John F., Kansas City
McDonough, John, St. Louis
McDowell, Frank, St. Louis
McEachen, William H., Kansas City
McElroy, Glenn L., Columbia
McFadden, Gene A., Waverly
McFadden, James F., St. Louis
McFadden, James F., Jr., St. Louis
McFarland, H. Richard, Kansas City
McFarland, Morris D., Kansas City
McGannon, Paul T., Kansas City
McGinnis, Byron J., St. Louis
McGinnis, William F., St. Louis
McGinty, Charles P., Cape Girardeau
McGregor, Ronald K., Decatur, Ill.
(Member St. Louis Medical Society)
McGuire, Thomas H., Kansas City
McHaney, John W., Jefferson City
McIntire, Emery J., Carthage
McIntyre, John D., Kansas City
McKaskle, Clarence W., Caruthersville
McKee, Joseph W., Kansas City
McKee, Oliver A., Kirkwood
McKee, Wallace P., Kansas City
McKenna, David H., Madison, Wisc.
(Member St. Louis Medical Society)
McKinney, Joseph K., St. Louis
McKinsey, John J., Springfield
McKinstry, Karl V., DeSoto
McKnelly, William V., Jefferson City
McKnelly, William V., Jr., Kansas City
McLain, Bobby M., Poplar Bluff
McLean, Royal C., St. Louis
McLelland, Richard I., Seattle, Wash.
(Member St. Louis Medical Society)
McLeod, John, Kansas City
McMahon, Alphonse, St. Louis
McMahon, Bernard J., Clayton
McManamon, Thomas V., Hazelwood
McMillan, Thomas E., Kansas City
McMurray, Herbert C., Manchester
McNalley, Frank P., Clayton
McNalley, Michael, St. Louis
McNamara, John J., Richmond Heights
McNeel, Lee A., Jr., Greenfield
McNew, William T., Carthage
McNutt, Theodore L., Kansas City
McPhee, William R., Kansas City
McPheeters, James W., Poplar Bluff
McPike, Lloyd H., Joplin
McSwiney, John G., St. Louis
McVay, James R., Kansas City
McVay, James R., Jr., Kansas City

M

Mabrey, John P., Plattsburg
Macauley, Bernard J., Poplar Bluff
MacBryde, Cyril M., St. Louis
Maccubbin, Don A., Kansas City
MacDonald, Robert R., Jr., St. Louis
Macdonald, William C., St. Louis
Macdonnell, Carey R., Marshfield
Macdonnell, Thomas M., Marshfield
Machek, Otakar, St. Louis
MacInnis, Florence E., Kansas City
Mack, Mary L., Joplin
Mackenzie, James W., Columbia
Maclean, J. Alexander, Baldwin City, Kan.
(Member Jackson County Medical Society)
MacNaughton, Ralph E., Kansas City
MacNaughton, Robert A., Leawood, Kan.
(Member Jackson County Medical Society)
Macnish, James M., St. Louis
Macon, William L., Jr., St. Louis
Maddox, Albert R., Sedalia
Maddox, John D., Joplin
Maddux, William P., Springfield
Madison, Waite H., Kansas City
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Magaletta, George E., Cape Girardeau
Magee, Charles D., St. Louis
Magee, Robert L., El Dorado Springs
Magee, William E., St. Louis
Magidson, Joseph, St. Louis
Magill, Joseph S., Milan
Maginn, Richard L., St. Joseph
Magness, Guy N., St. Louis
Magness, William C., Branson
Mahe, George A., St. Louis
Maher, Robert W., Springfield
Maher, Thomas F., St. Louis
Mairs, Edgar J., Trenton
Maizus, Saul H., St. Louis
Malles, A. Conrad, St. Louis
Mandler, George, Chillicothe
Manganaro, Frank J., St. Louis
Mangels, Kenneth A., Independence
Mangelsdorf, Thomas K., St. Louis
Manion, Peter J., St. Louis
Mann, James K., Hannibal
Mannis, Ben G., St. Louis
Mansur, Edward E., Stuart, Fla.
(Member Cole County Medical Society)
Mantell, Harriet B., Kansas City
Maple, Francis M., Springfield
Marco, Philip J., Columbia
Marcus, Morris D., St. Louis
Margolis, Richard M., Florissant
Marienfeld, Carl J., Columbia
Markel, Arthur D., Poplar Bluff
Marks, Mark M., Kansas City
Marmor, William A., St. Louis
Mars, Hartley F., Forsyth
Marsh, Alice, Pleasant Hill
Marsh, Wallace S., Seattle, Wash
(Member Clay County Medical Society)
Marshall, Alfred H., Charleston
Marshall, Cameron F., Kansas City
Marshall, William G., Glasgow
Marston, F. James, Jr., St. Joseph
Martel, Dominique, St. Louis
Marten, Sue, Viburnum
Martin, Andrew D., Sikeston
Martin, Daniel J., St. Louis
Martin, Forrest L., Nevada
Martin, Frederick W., Jr., St. Louis
Martin, J. Barlow, St. Louis
Martin, James M., Kirkwood
Martin, John N., St. Joseph
Martin, Maynard W., Houston, Tex.
(Member St. Louis Medical Society)
Martin, Wilfred E., Odessa
Martin, W. Joe, Louisiana
Marty, Loraine A., Pierce City
Martt, Jack M., Columbia
Martz, John C., Webster Groves
Masor, Nathan A., Butler
Massie, Edward, St. Louis
Masters, William H., St. Louis
Masucci, Joseph M., Kansas City
Matera, Arnold W., N. Kansas City
Mathewson, Hugh S., Kansas City
Matovich, Violet B., Columbia
Matteson, Frank B., Grant City
Matthews, John G., St. Louis
Matthews, John I., Jefferson City
Mattis, Robert D., Clayton
Maughs, Sydney B., St. Louis
Max, Paul F., St. Louis
Maxey, Hugh W., Jefferson City
Maxson, T. Reed, Warrensburg
Maxwell, Richard W., St. Louis
May, Albert L., Jr., Poplar Bluff
May, Benjamin F., St. Louis
May, James W., Kansas City
Mayer, John H., Jr., Kansas City
Mayer, Robert A., St. Louis
Mayer, William D., Columbia
Mayfield, James L., Crystal City
Mays, Frank G., Washington
Maze, Lawrence E., St. Louis
Mead, Samuel T., Slater
Meador, James R., Clayton
Meagher, Arthur J., St. Louis
Medler, Francis J., St. Louis
Medlicott, William J., Kansas City
Mehan, Donald J., St. Louis
Mehan, George T., St. Louis
Meier, Francis X., Jefferson City
Meinberg, William H., St. Louis
Meiners, Paul N., St. Louis
Meiners, Theodore M., St. Louis
Meinershagen, Charles W., Jefferson City
Melburn, Colleen M., Columbia
Melgaard, S. Ross, Kansas City
Melia, Bernard J., Jr., Jefferson City
Melick, William F., St. Louis
Meluney, Solomon E., St. Joseph
Menchetti, Don E., Springfield
Mendelsohn, Robert S., St. Louis
Mendelson, David F., St. Louis
Mendonsa, Lawrence E., St. Louis
Menendez, Manuel F., St. Louis
Menne, Marvin G., Ironton
Mercado, Raul, Jr., Columbia
Merenda, Sam J., St. Louis
Meriwether, Don R., Kansas City
Merklin, Anton L., St. Louis
Merrims, Theodore, St. Louis
Merritt, Burch A., St. Louis
Merz, Jean J., St. Louis
Mestres, Hugh M., St. Louis
Metz, Charles O., St. Louis
Metzgar, Marshall T., Columbia
Meyer, Claude B., Nixa
Meyer, Curtis A., St. Louis
Meyer, Herman M., St. Louis
Meyer, James E., Manchester
Meyer, Jay, St. Louis
Meyer, John S., St. Louis
Meyer, Oscar D., St. Louis
Meyer, Paul W., Kansas City
Meyerhardt, Milton H., St. Louis
Meyers, Harold L., Mission, Kan.
(Member Jackson County Medical Society)
Meyers, John B., St. Louis
Meyers, Montague M., St. Louis
Mezera, Raymond A., St. Louis
Michael, Kenneth D., St. Louis
Michael, Vernon E., St. Louis
Michaelis, Charles E., Fredericktown
Michaelree, John F., St. Louis
Middleman, Isadore C., St. Louis
Middleton, John W., Louisiana
Mier, Thomas M., St. Louis
Mikhail, Girgis, St. Louis
Milder, Benjamin, St. Louis
Miles, George O., Kansas City
Miles, Paul W., St. Louis
Miller, Charles, Jr., Kirkwood
Miller, Charles W., St. Louis
Miller, Clinton L., Lee's Summit
Miller, Clyde S., Waynesville
Miller, D. Herbert, Muskogee, Okla.
(Member Chariton-Macon-Monroe-Randolph County Medical Society)
Miller, David V., Poplar Bluff
Miller, Geoffrey W., St. Louis
Miller, Gerald L., Kansas City
Miller, Harold W., Willow Springs
Miller, Howard S., Macon
Miller, Jule P., Jr., St. Louis
Miller, Leroy J., Columbia
Miller, Max I., Prairie Village, Kan.
(Member Jackson County Medical Society)
Miller, Norman C., St. Louis
Miller, Oliver J., Cape Girardeau
(Member Perry County Medical Society)
Miller, Wilson H., Kansas City
Millikin, Lester A., St. Louis
Milster, Clyde R., St. Louis
Miltenberger, Paul C., Kennett

Minetree, Thomas A., Poplar Bluff
Minnihan, Robert W., Affton
Minton, Robert S., St. Joseph
Mishkin, Marvin R., St. Louis
Miskovsky, Emil F., St. Louis
Missey, Wilburn C., Jr., St. Louis
Mitchell, Andrew D., Kansas City
Mitchell, Franklin L., Columbia
Mitchell, Robert H., Kansas City
Mitchell, Roy E., Salem
Mitchell, Thomas J., St. Clair
Mitra, Nirmal K., Kansas City
Mixson, William C., Kansas City
Modlin, John J., Columbia
Moe, William W., Kansas City
Moellenhoff, Robert W., Washington
Moen, Berwyn H., St. Joseph
Molden, Charles A., St. Louis
Monafo, William W., Jr., St. Louis
Monat, Seymour, St. Louis
Montani, Charles, St. Louis
Montello, Samuel A., Kansas City
Montes-de-Oca, Julio, St. Louis
Montgomery, Austin F., Brentwood
Montgomery, James G., Kansas City
Moody, Jackson C., Harrisonville
Mooney, Justin L., Kansas City
Mooney, Marcel L., Kansas City
Moore, Alva, St. Louis
Moore, Carl V., St. Louis
Moore, Dan B., St. Louis
Moore, Harry G., St. Louis
Moore, Harry G., Jr., St. Louis
Moore, John L., St. Louis
Moore, Robert A., Kansas City
Moore, Walter L., St. Louis
Moore, William E., Normandy
Moranville, Benedict A., Columbia
Morehead, William E., Malden
Morest, F. Stanley, Pompano Beach, Fla. (Member Jackson County Medical Society)
Morgan, David B., Kansas City
Morgan, Harry C., St. Louis
Morgan, Troy O., Jr., Albany
Morgan, W. Thomas, Jr., West Plains
Morris, Harvey E., St. Louis
Morris, Joseph H., Jr., Independence
Morris, Mary E., St. Louis
Morris, William R., Kansas City
Morrison, Arlen, Clayton
Morrison, Donald H., Kansas City
Morrison, George B., Nevada
Morrison, T. A., Aurora
Morse, Marvin, St. Joseph
Mortensen, Frede, St. Louis
Morton, Paul C., Springfield
Moseley, F. Thomas, Springfield
Moses, Robert A., St. Louis
Moss, Paul, Kansas City
Mosser, Robert S., Independence
Mothershead, John L., St. Joseph
Motzel, Albert J., St. Louis
Mount, Allan, Independence
Mountjoy, Grace S., St. Louis
Mowrey, William O., Jennings
Moyer, Carl A., St. Louis
Muckerman, Richard I. C., St. Louis
Mueller, Clarence E., St. Louis
Mueller, John J., Chesterfield
Mueller, Joseph A., St. Louis
Mueller, Martin J., Kansas City
Mueller, Morris A., St. Louis
Mueller, Robert, St. Louis
Mueller, Robert J., St. Louis
Mueller, Wilbur K., St. Louis
Muench, Albert H., St. Joseph
Muench, Ludwig O., Washington
Muenster, Vincent P., St. Charles
Muether, Raymond O., St. Louis
Mullarky, Wilbur A., St. Louis
Mullen, Jack, Bonne Terre
Mullen, Leo M., Kansas City
Mulligan, Leo V., St. Louis
Mullinax, Orr, Nevada
Mullins, Bernard L., N. Kansas City
Mullins, John E., St. Louis
Multhauf, Cyril J., Mission, Kan. (Member Jackson County Medical Society)
Mundy, Homer F., St. Joseph
Mundy, William L., Kansas City
Munsch, Girard A., St. Louis
Murney, Joseph A., Union
Murphy, Bernard L., Hannibal
Murphy, George E., St. Louis
Murphy, James J., Kansas City
Murphy, James P., St. Louis
Murphy, John C., St. Louis
Murphy, Paul, St. Louis
Murphy, Robert J., Kansas City
Muschany, Norman K., St. Louis
Musgrave, David E., Excelsior Springs
Musick, James D., Springfield
Mutshnick, Clara P., St. Louis
Myers, James M., Rolla
Myers, John S., Kansas City
Myers, Robert M., Kansas City
Myers, Wilson A., Kansas City

N

Naime, Mansour J., Kansas City
Nakada, James R., St. Louis
Napper, Marvin L., Springfield
Naryka, Joseph J., St. Louis
Nash, Francis P., St. Louis
Nash, Helen E., St. Louis
Nash, W. Hampton, St. Louis
Nathan, Lester J., St. Louis
Neal, M. Pinson, Columbia
Needels, Orval T., Kansas City
Neilson, Arthur W., St. Louis
Nelson, Bentley A., Kansas City
Nelson, J. Roger, Kirkwood
Nelson, James S., Brentwood
Nemec, Stanley S., St. Louis
Ness, Carl K., St. Joseph
Nesselrode, John H., Independence
Nester, Charles A., St. Louis
Neu, Leo T., Jr., Springfield
Neubeiser, Ben L., St. Charles
Neun, William F., St. Louis
Newman, Mary J., Cassville
Newman, Percy, St. Louis
Newman, Robert L., Kansas City
Newport, Gerald, St. Louis
Newton, Gordon, St. Louis
Newton, William T., St. Louis
Nickel, James F., St. Louis
Nickson, Charles E., Jr., Independence
Nicolai, Charles H., St. Louis
Nicolay, Kenneth S., Kansas City
Nicolay, William R., St. Louis
Niedermeyer, Edward L., Tarkio
Niedermeyer, George J., St. Louis
Niesen, Frank J., St. Louis
Nigh, Charles A., St. Louis
Nigro, Dominic M., Kansas City
Nigro, E. Robert, Kansas City
Nigro, Joseph A., Kansas City
Nishi, Toshio, St. Louis
Nixon, Edward E., Gallatin
Noah, Joseph W., St. Louis
Noback, Richardson K., Kansas City
Nofles, James W., St. Louis
Nolan, Charles J., St. Louis
Noller, Henry W., Overland
Noltensmeyer, Milton N., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Norton, William H., St. Louis
Nouri, Hassan, St. Louis
Neutzel, John A., St. Louis
Nunn, Pat M., Kansas City, Kan. (Member Jackson County Medical Society)
Nunnelly, Gordon M., Cape Girardeau
Nussbaum, Paul B., Cape Girardeau
Nussbaum, Robert A., St. Louis
Nye, Robert S., St. Louis

O

Oakley, Margaret M., St. Louis
O'Bannon, Lon W., Jr., Florissant
Obermeyer, Charles G., St. Louis
O'Brien, Edward C., St. Louis
O'Brien, Harry F., Mexico
O'Brien, James A., Muskogee, Okla. (Member Jasper County Medical Society)
O'Brien, Robert M., St. Louis
O'Connor, Robert J., Florissant
O'Connor, William B., St. Joseph
O'Dell, Timothy T., Oran
O'Donnell, Joseph V., St. Louis
O'Dowd, James A., St. Louis
Oehler, William F., Cape Girardeau
Oetter, Donald L., St. Louis
Ogilvie, John H., Gravois Mills
Oglesby, Richard B., St. Louis
Ogura, Joseph H., Ladue
O'Hearne, John J., Kansas City
Ohmoto, Masao, St. Louis
O'Keefe, Joseph D., St. Louis
Okun, Edward, St. Louis
O'Leary, James L., St. Louis
Olin, Robert H., St. Charles
Olive, George C., Neosho
Oliver, George A., Farmington
Olmsted, William H., St. Louis
O'Malley, Eugene J., St. Louis
O'Malley, James F., Kansas City
O'Neal, Lawrence W., St. Louis
O'Neal, Patricia, St. Louis
O'Neil, James H., Kansas City
O'Neill, John B., St. Louis
Ongjoco, Melchor I., St. Louis
Oppenheimer, Henry E., Clayton
O'Reilly, D. Elliott, St. Louis
Orenstein, Joseph M., St. Louis
Orgel, M. Norman, St. Louis
Ortmeyer, Leroy F., St. Louis
Osborn, Retus W., III, Farmington
Osborne, Charles D., Sedalia
Osbourn, Richard A., Fulton
Ossman, Julian A., Jefferson City
Ost, Mark D., Kansas City
O'Sullivan, Daniel F., St. Louis
O'Sullivan, George A., St. Louis
Ott, Harold J., St. Louis
Ott, Harold J., Maplewood
Ottensmeyer, Charles D., Overland
Otto, Thomas G., Cape Girardeau
Overend, Donald S., Springfield
Overesch, Harry B., Kansas City
Overholser, Milton D., Columbia
Owen, Robert F., St. Louis
Owens, Graham J., Kansas City
Owens, Hugh H., Kansas City
Owens, Richard L., Kansas City
Owens, Robert H., Kansas City
Owings, Raymond H., Sedalia
Owre, Alfred, Jr., Kansas City
Ozar, Milton B., Kansas City
Ozenberger, Larry A., Plattsburg

P

Packman, Robert C., St. Louis
Paddock, Charles S., Joplin
Padfield, Earl G., Jr., Kansas City
Page, Jesse W., Sikeston
Paine, Robert, St. Louis
Painter, Andrew E., Portageville
Painter, Lattie B., Jr., Portageville
Pakula, Sidney, Kansas City
Palazzo, Frank A., St. Louis
Palcheff, Chris L., Springfield
Palenske, Robert L., Hornersville
Palermo, Vincent G., Chesterfield
Paletta, Francis X., St. Louis
Pallett, Harold A., Kansas City
Papp, Sandor D., Joplin
Parashak, Paul M., St. Louis
Parato, John M., St. Louis
Pareira, Morton D., St. Louis
Paris, William H., Florissant
Park, George M., Chesterfield
Park, William I., Jr., Springfield
Parker, Arthur C., Jr., Poplar Bluff
Parker, Brent M., St. Louis
Parker, Elmer L., Kansas City
Parker, H. Graham, Platte City
Parker, Hubert M., Kansas City
Parker, Robert H., N. Kansas City
Parker, Thomas W., University City
Parker, William, St. Louis
Parelman, Allen G., Kansas City
Parrish, Henry M., Columbia
Parsons, Bernie, Albany
Parsons, D. LeRoy, Cape Girardeau
Parsons, Eugene O., Kansas City
Parsons, Richard P., St. Louis
Pascoe, James J., Nevada
Passanante, Bartholomew M., St. Louis
Passman, Harold, Kansas City
Pate, Otho S., N. Kansas City
Patient, William F., St. Louis
Patterson, Donald R., Joplin
Patterson, Grover S., Carthage
Patton, William G., Arcadia, Calif. (Member of Mineral Area County Medical Society)
Pawol, S. E., St. Louis
Payne, John W., Columbia
Payne, Meredith J., St. Louis
Pearl, John F., St. Clair
Pearman, Carl C., Columbia
Pearse, Roy W., Jr., Nevada
Pearson, Paul E., Mission, Kan. (Member Jackson County Medical Society)
Peck, Chester R., Jr., Kennett
Peden, Burnet W., Clayton
Peden, James C., Jr., St. Louis
Peden, Joseph C., St. Louis
Peden, Joseph C., Jr., St. Louis
Peebles, J. B., Jr., Kirkwood
Peller, James O., St. Louis

Peete, Don C., Kansas City
Pelz, Mort D., Miami, Fla.
(Member St. Louis Medical Society)
Pemberton, Charles W., Arlington, Va.
(Member Grand River Medical Society)
Pence, F. Wendell, Carthage
Penick, Roland W., St. Louis
Penner, Stanley, Kansas City
Penninger, William H., Springfield
Pennington, Francis E., St. Louis
Pennoyer, James, Webster Groves
Penticost, Richard L., Kansas City
Perley, Michael, St. Louis
Perll, Maurice F., Kansas City
Perll, Rita D., Kansas City
Perna, Vincent P., Columbia
Pernoud, Flavius G., Jr., St. Louis
Pernoud, Michael F., St. Louis
Perry, David C., Mound City
Perry, H. Mitchell, Town & Country
Perry, Lawrence L., Jr., Kansas City
Perry, Ralph, Kansas City
Perry, William D., St. Louis
Petersen, Arthur G., Kansas City
Petersen, Gerald D., Kansas City
Petersen, Harold E., St. Joseph
Peterson, Carl M., Kansas City
Peterson, Donald B., Fulton
Peterson, Frederick D., St. Louis
Peterson, George L., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Peterson, Malcolm L., St. Louis
Peterson, Milton C., Kansas City
Peterson, Robert F., Kansas City
Peterson, Stanley S., Springfield
Peterson, Walter R., Kansas City
Petry, Ezra L., Kansas City
Pettit, Manson B., St. Joseph
Peugnet, Hubert B., St. Louis
Pfeffer, Leland U., Columbia
Pfeffer, Robert I., St. Joseph
Pfeifer, Oliver C., St. Louis
Pfeutze, Edwin L., Kansas City
Phelps, William L., New York, N. Y.
(Member St. Louis Medical Society)
Phillips, Hanford, St. Louis
Phillips, John J., St. Louis
Piccione, Leonard M., St. Louis
Pickard, Clarence M., Columbia
Pickard, Nicholas S., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Pickens, E. Allen, Nevada
Pickens, Edgar E., Kansas City
Pierron, John B., Kansas City
Pifer, Lawrence H., St. Joseph
Pigelli, Felix A., N. Kansas City
Pilla, Lawrence A., St. Louis
Pingelton, William B., Columbia
Pinsker, Oscar T., Kansas City
Piper, August T., St. Louis
Piper, Donald K., Kansas City
Pipes, Keith E., Brentwood
Pipkin, Garrett, Kansas City
Pitsinger, Nolan B., St. Louis
Pitts, Ferris N., Jr., St. Louis
Platt, William R., Clayton
Platz, John H., Carrollton
Plesons, John D., St. Louis
Ploussard, John H., Poplar Bluff
Plowman, Edward M., Hannibal
Plumlee, John E., Columbia
Plumpe, W. Tupper, St. Louis
Podrecca, Guido I., Springfield
Poggemeier, William H., Jr., St. Charles
Polk, George M., Kansas City
Polk, John W., Springfield
Pollack, Maxwell A., St. Louis
Pollock, Leo H., Kansas City
Poor, Carl W., Neosho
Pope, Charles H., Jr., Independence
Popp, Carl G., Sikeston
Porporis, Arthur A., St. Louis
Porter, Louis, Kansas City
Porter, Russell C., Seal Beach, Calif.
(Member Clay County Medical Society)
Portuondo, Bonaventura C., St. Louis
Poser, Charles M., Kansas City
Post, Cyril A., Poplar Bluff
Post, John P., Washington
Post, Lawrence T., Jr., St. Louis
Post, M. Hayward, Pleasant Valley, Conn.
(Member St. Louis Medical Society)
Post, Winfred L., Joplin
Potashnick, Robert, St. Louis
Potter, Caryl A., Jr., St. Joseph
Potter, Lee G., Kansas City
Potter, Reese H., St. Louis
Potter, Thompson E., St. Joseph
Potts, Donald A., Independence
Powell, Charles B., Florissant
Powell, Earl A., St. Louis
Powell, Edwin M., Springfield
Powell, Nelson E., Tulsa, Okla.
(Member Jackson County Medical Society)
Powell, Robert G., Joplin
Powers, John M., Kansas City
Powers, Pierce W., St. Louis
Powers, William E., St. Louis
Pozsgay, Michael S., St. Louis
Pranger, Sylvester H., St. Louis
Prater, Bill G., Springfield
Prentiss, Harry S., Kansas City
Presnell, Cleitus A., St. Louis
Press, Maurice J., St. Louis
Preston, Albert, Jr., Kansas City
Price, Charles H., Cassville
Price, Kenneth C., St. Louis
Printz, Joseph H., Kansas City
Printz, Otto J., Kansas City
Probst, Raymond E., St. Louis
Probstein, Jacob G., St. Louis
Proctor, Donald C., Sedalia
Proetz, Arthur W., St. Louis
Pruett, Burchard S., St. Louis
Pruett, Hubert S., St. Louis
Pruett, Paul L., Springfield
Pucci, Gregory L., Kansas City
Pugh, Richard G., Independence
Purcell, Harry K., St. Louis
Purcell, Paul L., Smithville
(Member Marion-Ralls-Shelby County Medical Society)
Purkerson, Mabel L., St. Louis
Pyne, Herbert S., St. Louis

Q

Quer, Erich A., Kansas City
Quick, Richard T., St. Louis
Quintana, Manuel M., St. Joseph
Quistgard, Paul C., Kansas City

R

Rachlin, Maxwell, Brentwood
Rader, Ada B., Kansas City
Rader, Edward S., St. Louis
Rader, George B., St. Louis
Raemdonck, Alphonse J., St. Louis
Ragland, John E., Ballwin
Ragsdale, George M., Paris
Raich, Robert A., Kansas City
Rainey, Robert, St. Louis
Rainwater, Elmer H., Springfield
Rall, Kenneth L., Columbia
Ramey, Ehret O., Kansas City
Ramos, John F., Jr., Kansas City
Ramos, Raoul L., St. Louis
Ramsey, Robert H., Ferguson
Randall, Don Q., St. Charles
Rannie, Paul R., Independence
Rao, Carlo, St. Louis
Rapp, Earl L., Hannibal
Rapp, Harold B., Cape Girardeau
Rappold, H. O., St. Louis
Rawlins, Fred E., Cape Girardeau
Rawlins, Kelly, Holden
Ray, C. Thorpe, Columbia
Raybuck, Harry E., St. Louis
Ready, James H., Florissant
Reas, Herman W., Boston, Mass.
(Member St. Louis Medical Society)
Recant, Lillian, St. Louis
Rector, Joe L., Jr., Kansas City
Redington, James C., Jr., Clayton
Redmond, William, St. Joseph
Reed, Theresa G., St. Louis
Reeder, Charles C., New Madrid
Reese, A. Victor, St. Louis
Reeves, L. A., Columbia
Reh, Edward P., St. Louis
Rehm, Ralph, Bloomfield
Reich, Harry A., St. Louis
Reich, Oliver F., Imperial
Reichert, M. Cecelia, St. Louis
Reiches, Aaron J., St. Louis
Reid, James A., Marshall
Reider, Richard A., St. Louis
Reilly, Leo J., St. Louis
Reilly, Pierce J., St. Louis
Reineck, John A., St. Louis
Reinhard, Edward H., St. Louis
Reinhardt, George R., Kansas City
Reis, Carl J., St. Louis
Reister, Dorothy D., Kansas City
(Member St. Louis County Medical Society)
Reister, Philip D., Kansas City
Reitman, Stanley, St. Louis
Reitz, Carl H., Kansas City
Remley, George C., Kansas City
Rendleman, George F., St. Louis
Rendleman, George, Jr., St. Louis
Rennard, Marvin, St. Louis
Repetto, Albert M., St. Louis
Repp, Theodore J., St. Louis
Reuter, Louis A., St. Louis
Revare, Paul, Kansas City
Revels, Harry, III, St. Louis
Reynolds, Clarence C., Kansas City
Reynolds, Fred, St. Louis
Reynolds, Garland A., Cape Girardeau
Reynolds, Harry E., St. Louis
Reynolds, James R., Neosho
Rhoades, Arthur B., Kansas City
Rhodes, Euhlan L., Warsaw
Rice, Carl E., Hillsboro
Rice, Earl R., Fort Lauderdale, Fla.
(Member St. Louis Medical Society)
Rice, Grover C., Brunswick
Richards, Frank O., St. Louis
Richardson, George A., Union
Richardson, Marion W., Kansas City
Richardson, William D., Ghana, West Africa
(Member Clay County Medical Society)
Richardson, William R., Union
Richert, Robert C., Kansas City
Richman, Elmer, St. Louis
Richtarsic, Stephen R., St. Louis
Richter, William B., Stockton
Riddell, Richard V., St. Joseph
Ridings, G. R., Columbia
Ridings, Harold D., Cape Girardeau
Ridzon, Thomas J., St. Charles
Ries, Douglas A., St. Louis
Riffel, Gordon W., Bourbon
Rifkin, Shale M., St. Louis
Riggio, Salvatore N., St. Louis
Rigney, Levi M., Springfield
Riley, Charles T., Richmond
Riley, John J., St. Louis
Riley, Joseph P., Jr., Kansas City
Riley, William H., St. Louis
Riller, Lowell E., Kansas City
Rinck, Edward C., Nevada
Riordan, Lawrence M., St. Louis
Ritchie, Frances R., St. Louis
Ritter, Hubert A., St. Louis
Ritter, Paul J., St. Louis
Ritter, Raymond A., Cape Girardeau
Ritterbusch, James K., Fulton
Roark, Glenn E., Columbia
Roberts, Grosvenor G., Kansas City
Roberts, Harold K., Clayton
Roberts, Harold M., Kansas City
Roberts, John P., Kirkwood
Roberts, John R., St. Louis
Roberts, L. Marvin, Kansas City
(Member Clay County Medical Society)
Roberts, Paul A., Sweet Springs
Roberts, Sam E., Kansas City
Robertson, Frank G., St. Louis
Robertson, Robert C., Fulton
Robertson, William D., Poplar Bluff
Robertson, William D., Kansas City
Robichaux, Eugene B., Excelsior Springs
Robins, Eli, St. Louis
Robinson, Arthur W., Kansas City
Robinson, Edith C., St. Louis
Robinson, E. Kip, Kansas City
Robinson, George G., Humansville
Robinson, G. Wilse, Jr., Kansas City
Robinson, John A., Edgerton
Robinson, Van M., Kansas City
Robinson, William J., Leawood, Kan.
(Member Jackson County Medical Society)
Robison, James T., Jr., Kansas City
Roblee, Melvin A., St. Louis
Roche, Maurice B., St. Louis
Rodeman, John M., Sedalia
Rodes, Ned D., Mexico
Rodgers, Elrie P., Columbia
Rodgers, George H., Overland Park, Kan.
(Member Jackson County Medical Society)
Rodgers, Samuel U., Kansas City
Rodriguez, Ubaldo R., St. Louis
Roehrs, Marvin E., Marshall
Rogers, Cyril H., St. Louis
Rogers, Donald B., Omaha, Neb.
(Member Ozark Medical Society)

Rogers, John A., St. Louis
Rogers, John T., St. Joseph
Rogers, Robert L., Kansas City
Rohlfing, Edwin H., St. Louis
Rohlfing, Walter H., St. Louis
Roller, Merrill J., Hannibal
Rollins, Harry D., Winona
Rolufs, Lloyd S., Kirkwood
Rolwing, E. Charles, Charleston
Ronald, Douglas C., Butler
Roodman, Herman J., Overland
Roos, Albert, St. Louis
Roper, Charles L., St. Louis
Roper, Stanley D., Ozark
Rose, Charles W., Kansas City
Rose, Dalton K., St. Louis
Rosecan, Marvin, St. Louis
Rosen, Charles S., St. Louis
Rosen, Max, Springfield
Rosenbaum, Harry D., St. Louis
Rosenbaum, Herbert E., St. Louis
Rosenfeld, Henry, St. Louis
Rosenstein, Daniel L., St. Louis
Rosenthal, Irwin I., St. Joseph
Ross, Gilbert, Jr., Columbia
Rost, William B., St. Joseph
Roter, Alexander M., St. Charles
Roth, John J., St. Louis
Rother, Paul H., St. Charles
Rothman, David, St. Louis
Rothweiler, Robert J., St. Louis
Roufa, Joseph F., St. Louis
Roulhac, George E., St. Louis
Rouse, David M., Mexico
Rouse, Ernest T., St. Louis
Rowlette, Avery P., Moberly
Roy, Joseph A., Jennings
Royce, James J., Sarcoxie
Royce, Robert K., St. Louis
Royse, Roy P., Sullivan
Royston, Grandison D., Hope, Ark.
(Member St. Louis Medical Society)
Rubenstein, Melvin, St. Louis
Rubin, Robert, St. Louis
Rubin, Sidney, Kansas City
Rubnitz, Leon H., Kansas City
Rudi, Herbert J., St. Louis
Rufe, John R., Kansas City
Ruff, T. Eugene, Poplar Bluff
Ruhling, Rudy, St. Louis
Rusan, Thomas E., St. Louis
Rusk, Earl M., Camdenton
(Member Callaway County Medical Society)
Russell, Barbara E., Rolla
Russell, Earl D., Springfield
Russell, Herman E., Berkley
Russell, James L., Kansas City
Russell, Joseph P., Jefferson City
Russell, Robert K., Raytown
Rutledge, John F., Festus
Rutledge, William J., Campbell
Ryan, John B., Washington
Ryan, John H., St. Joseph
Ryan, John J., Clayton
Ryan, Robert E., St. Louis

S

St. John, Thomas C., St. Louis
Sabates, Felix N., Columbia
Sachar, Leo A., St. Louis
Saferstein, A. Lester, Kansas City
Sala, Jose M., Springfield
Saladino, Anthony, Kansas City
Sale, Llewellyn, St. Louis
Sale, Llewellyn, Jr., St. Louis
Salisbury, William J., St. Louis
Sammons, Harry C., St. Louis
Samuelson, Edward A., Kansas City
Sanders, Donald C., Kansas City
Sanders, George E., Excelsior Springs
Sanders, Harmon U., Jr., Lawrence, Kan.
(Member Jackson County Medical Society)
Sanders, Jack S., Jefferson City
Sanders, Robert D., St. Louis
Sanders, Theodore E., St. Louis
Sanders, William F., Kansas City
Santanello, William M., St. Louis
Santiago, Miguel, St. Louis
Santoro, Carlos G., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Saper, Philip, Lee's Summit
Sargent, Alden P., Sikeston
Sargent, John P., Sikeston
Sarno, Samuel M., Morehouse
Sasano, Joseph R., Jr., Kansas City
Sato, George, St. Louis
Satterfield, Val B., Chesterfield
Sauer, Gordon C., Kansas City
Sauer, W. Nicholas, St. Louis
Saunders, Everett L., Independence
Sawyer, Floyd E., Kansas City
Sawyer, James, St. Louis
Scanlon, Robert C., Springfield
Scarpellino, Louis, Kansas City
Schaan, Robert C., St. Louis
Schaef, Mary L., St. Louis
Schaefer, George J., St. Louis
Schaefer, Glennon S., Jr., St. Louis
Schaerer, Jacques P., St. Louis
Schaerrer, William C., Kansas City
Schaper, Ernest H., St. Louis
Schattyn, Martyn, St. Louis
Schechter, Samuel E., St. Louis
Scheele, Paul M., St. Louis
Scheer, George E., St. Louis
Scheff, Harold, St. Louis
Scherman, Victor E., St. Louis
Schertz, Truman B., N. Kansas City
Scheuber, Charles, Columbia
Schewe, Elmer J., Jr., Columbia
Schierman, William D., Clayton
Schiffmacher, Jack E., Kansas City
Schillie, Gene A., Kansas City
Schlansky, Seymour M., St. Louis
Schlenker, Lawrence, St. Louis
Schluer, Elmer P., St. Louis
Schmidt, Charles A., Gerald
Schmidt, Edwin H., St. Louis
Schmidt, Edmund M., St. Louis
Schmidt, J. H., Jefferson City
Schmiemeier, Roy H., St. Louis
Schmitz, Edgar F., St. Louis
Schneider, Sam, St. Louis
Schneider, Thomas A., St. Charles
Schoeberl, Cletus B., Joplin
Schoeck, Albert F., St. Louis
Schoentag, John S., St. Louis
Schopp, Alvin C., St. Louis
Schorer, Edwin H., Kansas City
Schottman, Gerhard W., Jr., Kansas City
Schranck, Charles R., St. Louis
Schroeder, Henry A., St. Louis
Schroff, Carle H., Springfield
Schuetz, Alfred, Fulton
Schulte, Gregory A., Joplin
Schultz, E. Robert, St. Louis
Schultz, Loraine E., Branson
Schultz, Samuel, St. Louis
Schutz, Carl B., Kansas City
Schutz, Richard B., Kansas City
Schwartz, Eugene J., Springfield
Schwartz, Frederick O., St. Louis
Schwartz, Henry G., St. Louis
Schwartz, John T., Columbia
Schwartz, Melvin M., St. Louis
Schwartzman, Bernard, St. Louis
Schweiss, John F., St. Louis
Schweitzer, Fred C., Jr., Springfield
Sciortino, Gaspare, St. Louis
Sciortino, John S., St. Louis
Scokel, Paul W., III, St. Charles
Scopelite, Joseph A., St. Louis
Scorse, Sidney W., Joplin
Scott, Clive D., Louisiana
Scott, Elwin P., St. Louis
Scott, Horace W., St. Louis
Scott, Wendell G., St. Louis
Seabaugh, Dayton I. L., Jackson
Seabaugh, Loy R., Cape Girardeau
Seabaugh, Oda L., Cape Girardeau
Seabaugh, Ottis D., Webster Groves
Seabaugh, William O. L., Cape Girardeau
Seabold, John A., University City
Seddon, John W., St. Louis
See, William B., Columbia
Seeley, James J., St. Louis
Seely, Clark W., Kansas City
Seib, George A., St. Louis
Seidel, Donald R., Wright-Patterson A.F.B., Ohio
(Member St. Louis Medical Society)
Senhauser, Donald A., Columbia
Senn, Emmett J., Herculaneum
Senne, Herbert C., St. Joseph
Sennott, John S., Jefferson City
Senor, Samuel E., St. Joseph
Senturia, Ben H., St. Louis
Senturia, Hyman R., St. Louis
Serkes, Kenneth D., St. Louis
Sertl, John D., St. Louis
Sevastianos, Aristides E., St. Louis
Sevin, Omar R., Rockhall, Md.
(Member St. Louis Medical Society)
Sewell, Minor F., Kansas City
Sewell, Walter S., Springfield
Sewing, Arthur H., St. Louis
Sexton, Daniel L., St. Louis
Sexton, Elmer E., St. Louis
Shackelford, Horace H., St. Louis
Shackleford, Elbert C., Kansas City
Shah, Anwar, St. Louis
Shahan, Philip T., St. Louis
Shanahan, Mary P., Joplin
Shaner, John F., St. Louis
Shank, Robert E., St. Louis
Shapiro, Lazare M., Kansas City
Shapleigh, John B., St. Louis
Sharp, Austin R., St. Louis
Shatz, Burton A., St. Louis
Shaw, Carvel T., Hermann
Shaw, William J., Fayette
Shaw, William J., Jr., Fayette
Shea, James G., Gerald
Sheahon, John A., Kansas City
Shecter, Nathan, Kansas City
Sheets, John S., St. Louis
Sheets, Martin E., Chesterfield
Shelden, Russell D., Kansas City
Sheldon, John, Kansas City
Shelton, Earl W., St. Louis
Shelton, Edward O., Eldon
Shen, Jerome T. Y., St. Louis
Sheppard, Lee C., Jr., Columbia
Sherard, Julius C., St. Louis
Sheridan, Edmund R., St. Louis
Sherman, Alfred I., St. Louis
Sherry, Sol, St. Louis
Sherwin, Charles S., St. Louis
Shevlin, Charles F., St. Joseph
Shieber, William, St. Louis
Shiflet, Albert W., Wheeling
Shifrin, Alexander, Kansas City
Shireman, Kenneth L., Kansas City
Shires, Edward B., Leawood, Kan.
(Member Jackson County Medical Society)
Shirey, Arnold G., Hayti
Shobe, Frank O., St. Louis
Shockley, Clarence J., Kansas City
Shofstall, Charles K., Kansas City
Shopfner, Charles E., Kansas City
Shoss, Milton, Cape Girardeau
Shreffler, Algie R., Tavernier, Fla.
(Member St. Louis Medical Society)
Shuey, Herbert H., Kansas City
Shull, George D., Jefferson City
Shuman, Joseph S., St. Louis
Shumate, L. St. Clair, Reeds Spring
Shyken, Herman, St. Louis
Shypper, Moses J., Kansas City
Siceluff, Joseph G., Springfield
Siegel, Carl D., Sedalia
Siegel, Irving, Kansas City
Siemers, George E., St. Louis
Siesener, Herbert H., St. Louis
Sievers, Edward F., Miami Beach, Fla.
(Member St. Louis Medical Society)
Sights, Warren P., Jr., Columbia
Signorelli, Andrew J., St. Louis
Silsby, Don H., Springfield
Silsby, Don J., Springfield
Silsby, Harry D., Springfield
Silver, Bernd, St. Louis
Silver, Herbert, St. Louis
Silverberg, Charles, St. Louis
Silvermintz, Saul D., Ladue
Silverstein, Martin E., Kansas City
Simms, Otho M., St. Charles
Simon, David L., St. Louis
Simon, Jerome I., St. Louis
Simon, Nathan M., Clayton
Simon, Sanford, Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Simpson, Albert P., Springfield
Simpson, Eber, St. Louis
Simpson, Emerson L., Springfield
Simril, Wayne A., Clayton
Sims, William A., Jr., St. Louis
Sinclair, Alexander B., Kansas City
Singleton, John M., III, Kansas City
Sisk, James C., St. Louis
Sisson, Richard G., St. Louis
Skeffington, Mary J., St. Louis
Skilling, David M., Jr., St. Louis
Skillman, Robert K., Shawnee Mission, Kan.
(Member Jackson County Medical Society)
Skinner, John S., St. Louis
Skinner, John T., Kansas City
Sklenar, Donald E., St. Joseph
Slaughter, Carl R., N. Kansas City
Slaughter, Shelby C., Fredericktown
Slentz, Edwin L., Kansas City
Slentz, William A., Kansas City
Slickman, Robert A., Kansas City
Sloan, Roy C., Marshall

Sly, William S., St. Louis
Smiley, William, St. Louis
Smit, Herbert M., St. Louis
Smith, Arthur B., Kansas City
Smith, Audra B., Sikeston
Smith, Benjamin F., Jr., St. Louis
Smith, C. Franklin, Willow Springs
Smith, C. Souter, Springfield
Smith, Carl C., Moberly
Smith, Clifton, St. Joseph
Smith, Dale C., Kansas City
Smith, Dermott, St. Louis
Smith, Edwin I., Kansas City
Smith, Frank J., St. Louis
Smith, Garland F., St. Louis
Smith, George E., St. Louis
Smith, Grafton A., Columbia
Smith, Herbert P., St. Louis
Smith, Hubert E., Kansas City
Smith, Hugh R., St. Louis
Smith, Ira T., Kansas City
Smith, J. Earl, St. Louis
Smith, Jack I., St. Louis
Smith, James O., Clinton
Smith, Jason N., Jr., Columbia
Smith, Joe R., Columbia
Smith, John R., St. Louis
Smith, Katherine W., Kansas City
Smith, Kathleen, St. Louis
Smith, Milton, St. Louis
Smith, O. D., Mission, Kan. (Member Jackson County Medical Society)
Smith, Robert W., Marceline
Smith, Roland T., Joplin
Smith, Rollin H., West Plains
Smith, Sidney E., St. Louis
Smith, Ted P., Bowling Green
Smith, Wallace B., Independence
Smith, William J., Windsor
Smith, William R., Carthage
Smolik, Edmund A., St. Louis
Smoller, Martin B., St. Charles
Smull, Ned W., Kansas City
Snead, William H., Jr., Springfield
Sneid, Philip, Kansas City
Snider, Samuel H., Kansas City
Snider, Wilbur R., Independence
Snyder, Edward N., St. Louis
Somers, John E., Columbia
Sommer, Conrad S., St. Louis
Sommer, Ross B., St. Louis
Soto, Peter J., Jr., St. Louis
Soule, Samuel D., St. Louis
Spafford, Allen L., Kansas City
Spalding, Donald G., St. Louis
Spalding, Wilber B., Plattsburg
Spalding, Wilber B., Jr., Kansas City
Sparkman, Thomas C., Cape Girardeau
Spears, Charles A., Branson
Spears, Joe L., Cabool
Spector, Gene W., St. Louis
Spelman, Archibald E., Smithville
Spence, Elbert L., Kennett
Spencer, Andrew D., St. Louis
Spencer, Donald M., Kansas City, Kan. (Member Jackson County Medical Society)
Speno, Angelo A., St. Louis
Sperling, David, Birmingham, Ala. (Member St. Louis Medical Society)
Spinzig, Edgar W., Kirkwood
Spitz, Milton A., Milwaukee, Wis. (Member St. Louis County Medical Society)
Spoeneman, Marlin C., St. Louis
Spoenemann, Walter H., St. Louis
Sportsman, Weldon L., Kansas City (Member Clay County Medical Society)
Spratt, John S., Jr., Columbia
Spurgeon, Milo J., Columbia
Spurny, Otto M., Kansas City
Stacy, Wallace R., Independence
Stacy, Winton T., St. Joseph
Staehle, Melvin E., St. Louis
Stafford, Walter R., St. Louis
Staggs, William A., Kansas City
Staley, Harry R., Kansas City
Stallard, Donald J., St. Joseph
Stamp, Warren C., St. Louis
Stanfield, Ned M., Jr., St. Louis
Stansbrough, Raymond A., St. Louis
Staple, Tom W., St. Louis
Starks, Helen, Kansas City (Sister Paula Theresa)
Starkloff, Gene B., St. Louis
Starkloff, Max, St. Louis
Statland, Harry, Kansas City
Statland, Morris, Kansas City
Staton, R. Hamilton, Carrollton
Stauffacher, C. Gordon, Sedalia
Stauffer, Harry B., Jefferson City
Steele, Jack T., St. Louis
Steele, James C., Jr., Hannibal
Steffen, Lawrence F., Kansas City
Stegman, Elmer G., Raytown
Stein, Arthur H., Jr., St. Louis
Stein, Harry J., St. Louis
Stein, Joseph W., Kansas City
Stein, Leonard A., St. Louis
Stein, Martin F., St. Louis
Steinbeck, Herbert D., Chappaqua, N. Y. (Member Franklin-Gasconade-Warren County Medical Society)
Steinbeck, Herbert F., St. Louis
Steinberg, Franz U., St. Louis
Steiner, Alexander J., St. Louis
Stelle, Charles W., Kansas City
Stelmach, Walter J., Kansas City
Stephens, LeRoy J., St. Louis
Stephens, Louis F., St. Louis
Stephens, William A., St. Louis
Stephenson, Hugh E., Jr., Columbia
Stergen, Nick E., St. Louis
Sterkel, Richard L., St. Louis
Sterling, John A., Kirkwood
Stevens, Robert W., St. Louis
Stewart, Frances H., St. Louis
Stewart, John W., St. Louis
Stewart, Mark A., St. Louis
Stewart, Robert B., Springfield
Stewart, Robert H., Sedalia
Stewart, R. Wendell, Springfield
Stewart, Wendell K., Cape Girardeau
Stewart, William J., Columbia
Stewart, Worley K., El Dorado Springs
Stickle, Arthur W., St. Louis
Stickler, Ralph O., Kirksville
Stindel, Charles E., St. Louis
Stockton, Raymond W., Kansas City
Stockwell, A. Lloyd, Kansas City
Stokes, James M., St. Louis
Stolar, Jacob, St. Louis
Stone, Raymond F., Kansas City
Stoneman, William, III, St. Louis
Stotts, Charles S., Prairie Village, Kan. (Member Jackson County Medical Society)
Stratemeier, Edward H., Kansas City
Strauchen, Gilbert W., Key Largo, Fla. (Member St. Louis County Medical Society)
Strauss, Arthur E., St. Louis
Strauss, Carl F., Kansas City
Streetor, Roderick D., St. Louis
Strehlman, Benjamin G., Union
Stribling, Thomas L., Independence
Stricker, Emil A., St. James
Stricker, Harold C., Jefferson City
Strittmatter, James C., Caruthersville
Strobach, Robert L., Butler
Strominger, Donald B., St. Louis
Stromsdorfer, Paul G., St. Louis
Strong, Richard M., Hannibal
Stryker, Garold V., Venice, Fla. (Member St. Louis Medical Society)
Stryker, William I., Ladue
Stuart, Byron M., Boonville
Stuart, Daniel D., Brunswick
Stuart, Wallace, Manchester
Stude, William C., St. Louis
Stuebner, Roland W., St. Louis
Stuerman, Lawrence G., Louisiana
Stufflebam, Robert E., Springfield
Sturtevant, Harwood N., Springfield
Stutsman, Albert C., St. Louis
Suba, Antonio R., St. Louis
Sudholt, Alfred F., Jr., St. Louis
Sugarbaker, Everett D., Jefferson City
Sugg, Winfred L., Bethesda, Md. (Member St. Louis Medical Society)
Sullivan, Clement J., St. Louis
Sullivan, William W., Glendale
Summers, Caldwell B., Kansas City
Summers, Jacob H., Lebanon
Summers, John B., St. Louis
Summers, Joseph S., Jr., Jefferson City
Summers, Thomas F., St. Louis
Sunderman, Raymond C., St. Louis
Sundstrom, Frank D., Springfield
Sunshine, Herbert, St. Louis
Susanka, William D., St. Louis
Susman, Irvin C., St. Louis
Susman, Noah, St. Louis
Sutherland, Gladys P., Bethany
Sutphin, John B., St. Louis
Sutter, Richard A., St. Louis
Sutton, Richard L., Jr., Kansas City
Swafford, Owen J., Senath
Swarm, Richard L., Bethesda, Md. (Member St. Louis Medical Society)
Sweany, Henry C., Mt. Vernon
Sweet, Herbert C., Webster Groves
Sweets, Henry H., Jr., Hannibal
Sweiger, James H., Maysville
Swisher, Robert C., Kansas City
Switzer, Clyde, Merriam, Kan. (Member Jackson County Medical Society)
Swope, Joseph A., Webster Groves
Sydow, Henry A., Fulton
Szabados, Ernest D., Independence
Szymanski, Stanley R., Macon

T

Tadlock, Baxter W., St. Joseph
Tahir, Mohammad, St. Joseph
Tanaka, George M., St. Louis
Tanner, Robert H., Jefferson City
Tapp, Ernest M., Poplar Bluff
Tapper, Stephen M., St. Louis
Tarrasch, Ernest L., Springfield
Tarson, Solomon S., Overland Park, Kan. (Member Jackson County Medical Society)
Tarver, Quinton, Kennett
Tarvydas, Francis, Edina
Tashma, Sigmund, St. Louis
Tasker, Charles B., Kansas City
Tate, Lloyd L., St. Louis
Tatkow, Robert W., St. Louis
Taussig, Barrett L., St. Louis
Taute, Herman, St. Louis
Taylor, Eugene D., St. Louis
Taylor, Eugene T., St. Louis
Taylor, Helen L., St. Louis
Taylor, Leo T., Neosho
Taylor, Leon A., Jefferson City
Taylor, Van W., Bonne Terre
Taylor, William E., Springfield
Teall, Raymond E., Kansas City
Teare, Max E., Kansas City
Teiber, Frederick W., St. Louis
Tellez, Edward R., Fulton
Tendai, Mark M., Kirksville
Tenpenny, J. W., Poplar Bluff
Ternberg, Jessie L., St. Louis
Terrill, Robert S., Kansas City
Terry, James W., Jr., Cape Girardeau
Tess, Melvin J. H., St. Louis
Tesson, James A., Kansas City
Thale, Thomas, St. Louis
Theel, Otto W., Jr., Kansas City
Thiel, J. Allen, St. Louis
Thiele, Belmont R., St. Louis
Thiele, George H., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Thiele, Otto K., St. Charles
Thierauf, Charles G., St. Louis
Thoma, George E., Jr., St. Louis
Thomas, Charles S., St. Louis
Thomas, Christopher Y., Kansas City
Thomas, Forrest, St. Joseph
Thomas, Horace E., Columbia
Thomas, Lewis J., Jr., St. Louis
Thomasson, David D., Springfield
Thomasson, Mary W., St. Louis
Thomasson, Robert E., St. Louis
Thompson, Charles L., Kansas City
Thompson, Emma A. B., Columbia
Thompson, F. Gregg, Jr., St. Joseph
Thompson, F. Gregg, III, St. Joseph
Thompson, Ian M., Columbia
Thompson, J. William, St. Louis
Thompson, J. William, III, University City
Thompson, Lawrence D., St. Louis
Threadgill, Jesse M., Forsyth
Threlkeld, William L., Jr., Brussels, Belgium (Member Jackson County Medical Society)
Throgmorton, Howard B., Sikeston
Thurber, Claude M., Windsor
Thurman, Hill C., Parkville
Thurmann, Manfred, St. Louis
Thym, Henry P., St. Louis
Tibbs, William A., Jr., St. Louis
Tice, Wayne K., Independence
Tichenor, Robert W., St. Louis
Tietjen, Frederick O., Jefferson City
Tiffany, D. E., Mountain View
Tillman, Mary A. T., St. Louis
Tillman, Walter W., Jr., Springfield
Tindall, Robert N., St. Louis
Tinsley, John C., Jr., Columbia

Tiongson, Porfirio M., St. Louis
Tippett, Jack C., St. Louis
Titterington, Paul F., St. Louis
Tjoflat, Oliver E., St. Louis
Tobias, Norman, St. Louis
Todd, Paul C., Carrollton
Tombridge, Thomas L., Springfield
Tomlinson, William L., St. Louis
Tonelli, George L., St. Louis
Torin, Bernice A., University City
Tosh, John W., Poplar Bluff
Totten, Frederick E., Kansas City
Tovar, Manuel, St. Joseph
Towers, Orville W., St. Charles
Townsend, James A., Clayton
Townsend, Vincent F., Clayton
Tracy, Herbert A., Belton
Treiman, Robert C., St. Louis
Tremain, Ernest E., Maplewood
Tremain, Irl G., St. Louis
Trigg, Joseph F., St. Louis
Tripodi, Anthony M., Seal Beach, Calif. (Member St. Louis Medical Society)
Trippe, Harrison C., Shawnee Mission, Kan. (Member Jackson County Medical Society)
Triska, Roland A., St. Louis
Trotter, Francis O., Jr., St. Louis
Trotter, W. Yates, Springfield
Trowbridge, Barnard C., Kansas City
Trowbridge, Ellsworth H., Jr., Kansas City
Trueblood, Alva C., Jr., St. Louis
Trugly, Edith S., St. Louis
Trunko, Leo, St. Louis
Tsang, John L. K., Springfield
Tschetter, David J., St. Joseph
Tucker, Eugene F., St. Louis
Tucker, George L., Alton, Ill. (Member St. Louis Medical Society)
Tull, Frank, Sikeston
Tuma, Arthur T., Poplar Bluff
Tureen, Louis L., St. Louis
Turner, C. M., St. Louis
Turner, Glenn O., Springfield
Turner, James H., Poplar Bluff
Turner, James K., St. Louis
Turner, Percy C., Kansas City
Turner, Rush, St. Louis
Turner, William F., Poplar Bluff
Tutera, Dominic F., Kansas City
Tuthill, Herbert, Kansas City
Tuttle, Jay F., Fulton
Twedell, Donald L., St. Louis
Twin, Edward J., Kansas City
Twyman, Richard A., Kansas City
Tygett, Glenn J., Cape Girardeau
Tygett, Joseph N., Cape Girardeau

U

Uhlemeyer, Henry A., St. Louis
Ulett, George A., St. Louis
Ulett, Pearl C., St. Louis
Underwood, Dick H., Kansas City
Underwood, Harry A., Kansas City
Underwood, Johnson, Jr., Kansas City
Underwood, Millard K., Rolla
Underwood, Ross H., Kansas City
Unger, Harold, Kansas City
Ungvari, Joseph C., St. Louis
Upsher, Albert E., Kansas City
Urban, Edgar D., Sikeston
Utley, James H., St. Louis
Utley, Joe R., St. Louis
Utterman, William F., Perryville

V

Vacca, Joseph B., St. Louis
Vail, A. Denton, Springfield
Valach, Frank J., Brentwood
VanBiber, James T., Independence
Van Buskirk, Terrance E., Kansas City
Van Buskirk, William C., Kansas City
Vanderpearl, Robert H., St. Louis
Vandiver, Virgil D., Chillicothe
Vandover, John T., St. Louis
Van Dyke, Elmer H., Sedalia
VanGoidsenhoven, Guy, St. Louis
Van Matre, R. M., Washington, D. C. (Member St. Louis Medical Society)
Van Norman, Robert T., St. Louis
Van Peenen, Hubert J., Columbia
Vatterott, Paul B., St. Louis
Vaughan, J. Russell, St. Louis
Vaughn, Arthur N., St. Louis
Vaughn, James W., Kansas City
Velasco, Ernest, St. Louis
Venable, H. Phillip, St. Louis
Vensel, Lee H., Springfield
Verda, Dominic J., St. Louis
Vermeire, David A., Kansas City
Vermillion, Crofford O., St. Louis
Vescovo, Paul C., Jr., Kansas City
Vest, James C., St. Louis
Vester, James E., Bismarck
Vezeau, Stephen, St. Louis
Viers, Wayne A., St. Louis
Vilmer, Charles, Kansas City
Vincent, Jack C., Kansas City
Vinyard, Jack L., Carrollton
Vinyard, Paul, St. Louis
Viraghaty, Julius Gy., Manchester
Virant, John A., St. Louis
Virden, Herbert H., Kansas City
Vitale, Anthony J., St. Louis
Vitale, Nicholas S., St. Louis
Vitt, Alvin E., St. Louis
Vitt, Edwin F., St. Louis
Viviano, Joseph G., St. Louis
Vizgird, Joseph J., St. Louis
Vogel, Eugene A., St. Louis
Vollmar, Clarence J., Webster Groves
Von Kaenel, Joseph E., St. Louis
Votaw, Robert E., St. Louis
Voth, Harold W., Kansas City
Vournas, Christopher G., St. Louis

W

Wacker, Leo L., St. Louis
Waddell, Kenneth E., Springfield
Waddle, Theodore L., Dexter
Wade, Frederick E., Kansas City
Wade, James P., St. Louis
Wadlow, Ernest E., St. Joseph
Wagenbach, William F., St. Louis
Waggoner, Charles M., Columbia
Waggoner, Sharon E., St. Joseph
Wagner, Paul J., Kansas City
Wakefield, Franklin H., Kansas City
Wakeman, Jasper N., Springfield
Wald, Stanley M., St. Louis
Walker, Ambrose T., Mammoth Springs, Ark. (Member South Central Counties Medical Society)
Walker, Francis S., St. Louis
Walker, George S., Clinton
Walker, Harvey, Jr., University City
Walker, Hugh B., Clinton
Walker, James C., Kansas City
Walker, John W., Kansas City
Walker, Orville C., Jr., Independence
Walker, Paul W., Joplin
Walker, Willard B., Clayton
Walker, William M., Springfield
Wall, Albert, St. Louis
Wall, Emmett D., St. Louis
Wall, Harry C., Kansas City
Wall, Joe A., Houston
Wall, Leonard A., Kansas City
Wallace, Edgar S., Mexico
Wallace, Hilen K., Scottsdale, Ariz. (Member Buchanan County Medical Society)
Walsh, James W., St. Louis
Walsh, Theodore E., St. Louis
Walsh, Thomas J., St. Louis
Walter, Archie L., Sedalia
Walter, Kenneth E., St. Louis
Walter, William L., St. Louis
Walters, Harold E., St. Louis
Walters, Henry W., St. Louis
Walters, John H., Columbia
Walters, Laura, Columbia
Walters, William H., St. Louis
Walterscheid, John H., Hannibal
Walther, Roy A., Jr., St. Louis
Walton, Franklin E., St. Louis
Walton, Marion C., Mountain View
Waltrip, Roy T., Jr., Sikeston
Wanamaker, John M., Rock Port
Ward, Joe, Lexington
Ward, Robert L., Centralia
Ward, Robert L., Kansas City
Warner, George K., Kirkwood
Warner, Robert G., St. Louis
Warren, T. Thomas, Potosi
Warres, Herbert L., Springfield
Washburn, J. Loren, Versailles
Washington, Edward L., Columbia
Wasserman, Helman C., St. Louis
Waterfield, Jim R., Springfield
Waterman, Franklin M., Liberty
Waters, E. Burton, Kirkwood
Waters, Hugh R., St. Louis
Watkins, George L., Jr., Farmington
Watson, Cecil L., Marshall
Watson, Ethel, Independence
Watson, Trevor F., Columbia
Wattenberg, Carl A., St. Louis
Watts, Byron E., Jefferson City
Waugh, George L., Kansas City
Waxman, David, Kansas City
Waxman, Jane Z., Kansas City
Wayland, Thomas A., Camdenton (Member Cole County Medical Society)
Weakley, David R., Kansas City
Webb, Harry E., Kansas City
Webb, Leslie R., Jr., Springfield
Webb, Marion A., St. Louis
Webb, Paul B., St. Louis
Webb, Paul B., Jr., St. Louis
Webb, Paul K., St. Louis
Weber, J. R., St. Louis
Weber, Sol, St. Louis
Weber, William K., Bridgeton
Webster, Roger W., Hayward, Calif. (Member Jasper County Medical Society)
Weed, Randal W., St. Joseph
Weeks, George R., Cape Girardeau
Weiford, Edward C., Kansas City
Weigensberg, Irving J., St. Louis
Weiler, Thomas J., St. Louis
Weinand, Ernest E., St. Joseph
Weinel, Francis G., St. Louis
Weinhaus, Robert S., St. Louis
Weinsberg, William C., St. Louis
Weintraub, Herbert D., Columbia
Weintraub, Solomon A., St. Louis
Weir, Don C., St. Louis
Weir, Royal A., St. Louis
Weis, Matthew W., St. Louis
Weisbrod, Wilfred B., St. Louis
Weisman, Renate D., St. Louis
Weisman, Sol, St. Louis
Weiss, James M. A., Columbia
Weiss, Stuart, St. Louis
Weitman, Maximiliam, St. Louis
Welch, Hooper W., St. Louis
Welker, Joseph E., Kansas City
Well, Julius W., Palmyra
Wells, Donald E., Glasgow
Wells, John H., Kansas City
Welsh, Laurence C., St. Louis
Weltscheff, Christo A., Kansas City
Wempe, G. Raymond, Maryville
Wenneker, Alvin S., St. Louis
Wennerman, Sam F., St. Louis
Wentzel, Louis R., St. Louis
Wepprich, Michael S., Washington
Werner, Dean F., N. Kansas City
Werner, Franklin C., Kansas City
Werner, William A., St. Louis
Werth, Duncan S., Glendale
Wessler, Stanford, St. Louis
West, Joseph W., St. Louis
Westerfeld, Roy A., St. Charles
Westerheide, Robert L., Columbus, Ohio (Member St. Louis Medical Society)
Westerman, Henry C., St. Louis
Westrup, Ellsworth A., Webster Groves
Wetzel, Fred S., Jr., Carthage
Weyerich, Leon F., St. Louis
Weygandt, Glenn R., St. Louis
Wheeler, Charles B., Kansas City
Wheeler, John H., Kansas City
Wheeler, Robert L., Harrisonville
Whitaker, Topsy H., East Prairie
White, Charles H., Prairie Village, Kan. (Member Jackson County Medical Society)
White, George A., Kansas City
White, James S., Kansas City
White, Jefferson E., III, Columbia
White, Newton B., St. Louis
White, Orville O., St. Louis
White, R. Ned, Springfield
White, Stoughton F., Kansas City
White, William E., Kansas City
White, William H., Jr., St. Louis
Whitehead, Frank F., Neosho
Whiteman, John R., Kansas City
Whitener, Miles C., St. Louis
Whitener, Paul R., St. Louis
Whitman, Doyle C., Kansas City
Whitsell, Ora E., St. Joseph
Whittaker, Charles K., Kansas City
Whitten, Marion F., Carthage
Whittico, James M., St. Louis
Wiedershine, Leonard J., St. Louis
Wiegand, Herbert C., St. Louis
Wieman, Harry K., Joplin
Wien, Irving A., Kansas City
Wiese, Harry W., Clayton
Wiggins, Roland L., Columbia
Wilcox, Ruth E., Joplin
Wilcoxen, William B., Bowling Green
Wild, Aloysius A., St. Louis

Wiles, Jack N., West Plains
Wilhelm, Warren F., Kansas City
Wilkinson, Charles B., Kansas City
Wilkinson, Everett A., Kansas City
Will, Leo A., Venice, Fla.
(Member St. Louis Medical Society)
Williams, Carol F., St. Louis
Williams, Charles S., Malden
Williams, Frank R., Kansas City
Williams, George P., Kansas City
Williams, Jerome, St. Louis
Williams, John M., Liberty
Williams, John W., Oak Grove
Williams, John W., Springfield
Williams, John W., Jr., Springfield
Williams, Joseph C., Jr., Kansas City
Williams, Luke E., Kansas City
Williams, Ray D., St. Louis
Williams, Robert A., Kansas City
Williams, Robert S., Mexico
Williams, Roland D., Kansas City
Williams, Starks J., Kansas City
Williams, Thomas A., Osceola
Williams, Vincent T., Kansas City
Williams, W. A., Jr., Cape Girardeau
Williamson, George L., Kansas City
Williamson, Walter E., St. Louis
Willits, Lyle G., Kansas City
Willman, Charles R., St. Joseph
Willman, Vallee L., St. Louis
Willms, Janice L., Gooding, Idaho
(Member St. Louis Medical Society)
Willoughby, James W., Kansas City
Willoughby, Jean B., Kansas City
Willumsen, Henry C., St. Joseph
Wilson, Alice H., Joplin
Wilson, Charles F., Cape Girardeau
Wilson, Clifford C., Kansas City
Wilson, Daniel R., Mt. Vernon
Wilson, Fred K., Winston
Wilson, George P., Columbia
Wilson, Hester J., Kansas City
Wilson, Hugh M., St. Louis
Wilson, John E., Columbia
Wilson, Keith S., St. Louis
Wilson, Loys C., Kennett
Wilson, Roy E., Springfield
Wilson, Vernon E., Columbia
Wilson, Virgil R., Rosendale
Wilucki, Leo E., St. Louis
Wilucki, Melvin R., St. Louis
Wimmer, Warren J., St. Louis
Wimp, Jesse J., Kirksville
Windmiller, Myrl E., Columbia
Winegar, Alvon C., Jefferson City
Winer, Herbert J., Kansas City
Winkelman, Esther B., Kansas City
Winn, George W., Boonville
Winokur, George, St. Louis
Winston, Bernard H., Kansas City
Winter, John H., St. Louis
Winter, Tyrus D., St. Louis
Winterer, Roland A., St. Louis
Winters, Kathleen, St. Louis
Wipfler, Earl J., Jr., St. Charles
Wippo, Edgar W., St. Louis
Wirthlin, Edward H., St. Louis
Wise, George W., Kansas City
Wise, Gordon F., Springfield
Wissmath, Frank S., Clayton
Wissner, Seth, St. Louis
Withers, Orval R., Kansas City
Withrow, John B., Kansas City
Witt, Clyde M., St. Louis
Witt, Frederick W., St. Louis
Wittgen, Edward M., St. Louis
Wittler, Harry A., St. Louis
Wittmer, Samuel C., Springfield
Wolcott, Lester E., Columbia
Wolf, Jack W., Kansas City
Wolfe, Edward, Ann Arbor, Mich.
(Member St. Louis Medical Society)
Wolff, Dolores J., Grandview
Wolff, Harold D., St. Louis
Wolff, Paul G., Cape Girardeau
Wolfgram, Edwin D., St. Louis
Woltzen, Simon W., Clinton
Womack, Granville J., Chesterfield
Wommack, Fred L., Crane
Wood, Bennett R., St. Louis
Wood, George F., Fulton
Wood, George H., Carthage
Wood, James A., Clayton
Wood, William W., Springfield
Woodbridge, John H., St. Louis
Woods, Harold V., Independence
Woods, Ralph E., Clayton
Woods, S. Dwight, Kansas City
Woods, Walton C., Kansas City
Woodward, William W., Independence
Wooldridge, Bart F., Joplin
Wooldridge, Wilfred E., Springfield
Woolf, Ralph B., St. Louis
Woolsey, Robert M., St. Louis
Word, Parker H., St. Louis
Workman, Charles E., Kansas City
Workman, George M., Hermann
Worley, Charles A., Sweet Springs
Wortmann, Robert F., Kansas City
Wotawa, William J., St. Louis
Wray, Rolla B., Nevada
Wright, Robert P., Kansas City
Wu, William Q., Kansas City
Wulff, George J. L., Jr., St. Louis
Wurr, Dieter, St. Louis
Wurster, W. Joel, Kansas City
Wyatt, Lois C., Kirkwood

Y

Yaeger, Gerald A., St. Charles
Yancey, Daniel L., Springfield
Yanow, Mitchell, St. Louis
Yates, J. Lewis, Mt. Vernon
Ylagan, Amando, Jr., St. Louis
Yohe, Ruth M., Kansas City
Yore, Richard W., St. Louis
Yoskit, Harry, Festus
Youll, Donald V., Kansas City
Youmans, Ronald A., Kansas City
Young, Calvin C., Jr., Joplin
Young, James E., Kansas City
Young, Jesse W., Kansas City
Young, Paul R., Kansas City
Young, Robert B., Rolla
Young, Robert H., Moberly
Youngblood, James P., Kansas City
Younge, Walter A., St. Louis
Younger, Anita, St. Louis
Younger, Ernest, St. Louis
Yuan, Louis S. K., St. Louis

Z

Zacharias, David L., Kansas City
Zahn, Robert L., Springfield
Zahony, Ivan, Kansas City
Zahorsky, Theodore S., St. Louis
Zahrt, Frank H., Princeton
Zeffren, Joel L., St. Louis
Zellermayer, Jacob, Kansas City
Ziegelmeyer, John S., St. Louis
Ziegler, Anthony, Jr., Vandalia
Zillgitt, George H., St. Louis
Zimmerman, Herbert B., Olivette
Zimmerman, Joseph A., Kennett
Zingale, Frank G., St. Louis
Zink, Oscar C., St. Louis
Zuckner, Jack, St. Louis
Zukowski, Edward T., St. Louis
Zwart, Claude H., St. Louis
Zwirn, Benjamin H., St. Louis

Roster of Members by County Societies

ADAIR COUNTY
(North Central Counties Medical Society)

ANDREW COUNTY MEDICAL SOCIETY
(Savannah 64485)

Baker, Warren C., Savannah
Kelley, Gilbert B., Savannah
Kelley, Ralph R., Savannah
Long, Forrest C., Savannah
Wilson, Virgil R., Rosendale 64483

ATCHISON COUNTY
(Northwest Missouri Medical Society)

AUDRAIN COUNTY MEDICAL SOCIETY
(Mexico 65265)

Bradley, William W., Centralia 65240
Davis, Leonard L., Jr., 1415 S. Morris St.
Dwyer, Thomas L., 119 E. Love St.
Ector, Henry J., 314 S. Trinity St.
Ekern, H. Peter, 1415 S. Morris St.
Epple, Kathryn C., 502 E. Monroe St.
Epple, Lawrence K., 502 E. Monroe St.
Gantt, Ernest S., Jr., 105 W. Monroe St.
Garcia, Charles L., 203 E. Jackson St.
Jolly, Benjamin N., 112 N. Clark Ave.
Jolly, William H., 112 N. Clark Ave.
Kallenbach, G. P., 321 N. Washington St.
Lankford, Harold D., 117 E. Monroe St.
O'Brien, Harry F., 111 E. Monroe St.
Rodes, Ned D., 113 E. Monroe St.
Rouse, David M., 212 E. Monroe St.
Wallace, Edgar S., 210 E. Monroe St.
Williams, Robert S., Kemper Bldg.
Ziegler, Anthony, Jr., Vandalia 63382

BARRY COUNTY
(Ozarks Medical Society)

BARTON-DADE COUNTY MEDICAL SOCIETY

Arnold, Herbert M., Lamar 64759
Bauer, Harold A., Lockwood 65682
Bickel, Vern T., Lamar 64759
Cain, Alvin R., Lamar 64759
Carroll, Thomas W., Lamar 64759
Guldner, Edmond, Lamar 64759
McNeel, Lee A., Jr., Greenfield 65661

BATES COUNTY
(West Central Missouri Medical Society)

BENTON COUNTY MEDICAL SOCIETY

Logan, James A., Warsaw 65355

BOLLINGER COUNTY
(Unorganized)

BOONE COUNTY MEDICAL SOCIETY
(Columbia 65201)

Allen, Joseph E., Professional Bldg.
Allen, William C., 2401 Highland Dr.
Almond, Carl H., 807 Stadium Rd.
Anderson, Philip C., 807 Stadium Rd.
Anderson, William H., Fulton
Asel, Norman D., 807 Stadium
Austin, George N., 807 Stadium Rd.
Baker, A. Sherwood, 807 Stadium Rd.
Baker, James M., 16 South 10th St.
Battersby, Richard S., Candle Light Lodge
Black, Samuel P. W., 300 S. Glenwood St.
Boyce, John M., 807 Stadium Rd.
Brooke, Clement E., 901 Edgewood Ave.
Brukardt, Diane, 807 Stadium Rd.
Bruner, Claude R., Professional Bldg.
Buesseler, John A., 807 Stadium Rd.
Bumgarner, James E., 1504 E. Broadway
Bumgarner, Roger W., Route 1
Burkeholder, James N., 807 Stadium Rd.
Burns, Thomas W., 310 E. Brandon Rd.
Bynum, William R., 807 Stadium Rd.
Chalkley, Judson I., Boone County Hosp.
Chiasson, E. Chaille, 109 W. Broadway
Cochran, Donald Q., 1502 E. Broadway
Colwill, Jack M., 807 Stadium Rd.
Cooper, Maurice E., 1000 Wayne Rd.
Cope, James C., 1504 E. Broadway
Darnell, Thomas F. B., Doctors Clinic Bldg.
Denninghoff, James C., Stephens Bldg.
Dexheimer, Frank R., 113 W. Broadway
DeWeese, Marion S., 807 Stadium Rd.
Dietrich, Karl D., Professional Bldg.
Donegan, William L., Ellis Fischel Hosp.
Eggers, George W. N., Jr., 807 Stadium Rd.
Evans, Alden M., Ellis Fischel State Cancer Hosp.
Froelich, Robert E., 807 Stadium Rd.
Fuchs, George J., Jr., 1026 Hickory Hill Dr.
Galeota, William R., 807 Stadium Rd.
Garb, Solomon, 807 Stadium Rd.
Garrett, Glen H., Professional Bldg.
Gaunt, William D., 807 Stadium Rd.
Gay, George R., 807 Stadium Rd.
Goldner, John C., 807 Stadium Rd.
Griffin, William T., 807 Stadium Rd.
Hall, David G., 807 Stadium Rd.
Hardwicke, Henry H., Ashland 65010
Harris, Robert J., 2008 Hazelwood Dr.
Haun, Cosmo L., 807 Stadium Rd.
Hemenway, William G., 807 Stadium Rd.
Jackson, Robert L., 807 Stadium Rd.
Johnson, Richard E., Boone County Hosp.
Keown, Kenneth K., 807 Stadium Rd.
Kubin, Milford T., Ellis Fischel Cancer Hosp.
Lachance, Leopold, Centralia 65240
Ladenson, Roland P., 16 South Tenth St.
Landor, John H., 807 Stadium Rd.
Leech, Charles A., 1504 E. Broadway
Leeper, Sidlee W., 1504 E. Broadway
Lewis, Ray B., 1502 E. Broadway
Litwiller, R. W., 1312 W. Broadway
Lodwick, Gwilym S., 208 Ridgeley Rd.
Logue, John T., 1504 E. Broadway
Lohmar, Roland E., 1501 West Blvd. Ct.
Lowney, John F., 807 Stadium Rd.
Lucas, Fred V., 807 Stadium Rd.
McElroy, Glenn L., 1500 E. Broadway
Mackenzie, James W., 807 Stadium Rd.
Marco, Philip J., 807 Stadium Rd.
Marienfeld, Carl J., 807 Stadium Rd.
Martt, Jack M., 807 Stadium Rd.
Matovich, Violet B., 807 Stadium Rd.
Mayer, William D., 1000 Lakeshore Dr.
Mercado, Raul, Jr., 1709 Hinkson Ave.
Metzgar, Marshall T., 807 Stadium Rd.
Miller, Leroy J., Guitar Bldg.
Mitchell, Franklin L., 810 Greenwood Ct.
Modlin, John J., 706 Thilly Ave.
Moranville, Benedict A., 1504 E. Broadway
Neal, M. Pinson, 807 Stadium Rd.
Overholser, Milton D., 807 Stadium Rd.
Parrish, Henry M., 807 Stadium Rd.
Payne, John W., 1500 E. Broadway
Pfefer, Leland U., 1504 E. Broadway
Pickard, Clarence M., 113 W. Broadway
Pingelton, William B., 113 W. Broadway
Plumlee, John E., 807 Stadium Rd.
Rall, Kenneth L., 807 Stadium Rd.
Ray, C. Thorpe, 807 Stadium Rd.
Reeves, L. A., 807 Stadium Rd.
Ridings, G. R., 810 Yale Ave.
Roark, Glenn E., 807 Stadium Rd.
Rodgers, Elrie P., Box 157 65202
Ross, Gilbert, Jr., 807 Stadium Rd.
Sabates, Felix N., 807 Stadium Rd.
Scheuber, Charles, 1504 E. Broadway
Schewe, Elmer J., Jr., 1232 Sunset Dr.
Schwartz, John T., 807 Stadium Rd.
See, William B., Professional Bldg.
Senhauser, Donald A., 807 Stadium Rd.
Sheppard, Lee C., Jr., 608 Manor Dr.
Sights, Warren P., Jr., 807 Stadium Rd.
Smith, Grafton A., 917 Crestland Ave.
Smith, Jason N., Jr., 701 West Blvd. S.
Smith, Joe R., Professional Bldg.
Somers, John E., 807 Stadium Rd.
Spratt, John S., Jr., 204 Leslie La.
Spurgeon, Milo J., 404 Edgewood Ave.
Stephenson, Hugh E., Jr., 807 Stadium Rd.
Stewart, William J., 909 University Ave.
Thomas, Horace E., 1504 E. Broadway
Thompson, Ian M., 807 Stadium Rd.
Tinsley, John C., Jr., 16 S. Tenth St.
Van Peenen, Hubert J., 807 Stadium Rd.
Waggoner, Charles M., 201 W. Broadway
Walters, John H., 11 S. Williams St.
Walters, Laura, 11 S. Williams St.
Ward, Robert L., Centralia 65240
Washington, Edward L., 1504 E. Broadway
Watson, Trevor F., 1504 E. Broadway
Weintraub, Herbert D., 807 Stadium Rd.
Weiss, James M. A., 807 Stadium Rd.
White, Jefferson E., III, 104 E. Parkway Dr.
Wiggins, Roland L., 201 N. Third
Wilson, George P., 201 W. Broadway
Wilson, John E., 509 Laurel Dr.
Wilson, Vernon E., 807 Stadium Rd.
Windmiller, Myrl E., 1504 E. Broadway
Wolcott, Lester E., 2417 Beachview Dr.

BUCHANAN COUNTY MEDICAL SOCIETY
(St. Joseph)

Acuff, R. Phillip, 702 Jule St. 64501
Allaman, John M., 524 Spoonhill Dr. N., Sarasota, Fla. 33577
Ames, Mary B., 2318 Lovers La. 64505
Ames, William H., 902 Edmond St. 64501
Augustine, Robert W., 902 Edmond St. 64501
Bascom, Charles H., c/o Sudan Interior Mission, 164 W. 74th St., New York, N. Y. 10023
Beck, Paul M., Kirkpatrick Bldg. 64501
Benson, Scott C., 324 N. 6th St. 64501
Berney, Francis J., Kirkpatrick Bldg. 64501
Boteler, George M., 422 W. 47th St., Kansas City 64112
Bristow, Robert B., Physicians & Surgeons Bldg. 64501
Bryant, Sydney L., 902 Edmond St. 64501
Butler, E. F., 902 Edmond St. 64501
Carpenter, George T., 902 Edmond St. 64501
Christ, Martin H., 6106 King Hill Ave. 64504
Craig, Owen W. D., Kirkpatrick Bldg. 64501
Craig, Richard O., Kirkpatrick Bldg. 64501
Curran, Herbert A., 1302 Faraon St. 64501
Day, Maxwell, Schneider Bldg. 64501
Denton, Jimmy E., Ventura County Hosp., Ventura, Calif.
DuMont, Clement C., 1905 Francis St. 64501
Ferguson, Luther J., 2907 Francis St. 64501
Fisher, Joseph L., 7th & Jule Sts. 64501
Forgrave, John R., 420 N. 8th St. 64501
Forgrave, Leon P., 420 N. 8th St. 64501
Forman, George W., P. O. Box 830 64502
Fuson, Levi H., Kirkpatrick Bldg. 64501
Grant, Claude S., 1302 Faraon St. 64501
Grant, Phyllis L., 2401 Frederick St. 64506
Greenberg, Charles, 10669 Rochester Ave., Los Angeles, Calif.
Grimes, Manning E., Kirkpatrick Bldg. 64501
Gunter, Joe S., 902 Edmond St. 64501
Handler, Eric, Physicians & Surgeons Bldg. 64501
Harner, Casper G., 902 Edmond St. 64501
Hayes, Paul W., 902 Edmond St. 64501
Herman, Allen I., Physicians & Surgeons Bldg. 64501
Howden, Thomas L., 2723 Francis St. 64501
Hughes, Judson M., Fulton 65251
Hunt, William J., 2600 Pacific St. 64507
Ide, Lucien W., P. O. Box 830. 64502
Kieber, Robert W., Kirkpatrick Bldg. 64501
Kline, Carlyn M., 17 Stonecrest St. 64506
Kline, Edmund W., 510 Francis St. 64501
Knepper, Paul A., Box 830, 64502
Knoke, Frederick W., Jr., 2300 Wendy Way, Belleville, Ill.
Kratz, Frederick W., 1927 W. 152 Highway, Liberty 64068
Kulowski, Jacob, 2404 Highly St. 64506
Lee, Carleton H., 1402 Faroan St. 64501
McDaniel, John R., 902 Edmond St. 64501
McDonald, Wilbur P., 301 N. 8th St. 64501
Maginn, Richard L., 702 Jule St. 64501
Marston, F. James, Jr., 902 Edmond St. 64501
Martin, John N., Physicians & Surgeons Bldg. 64501
Meluney, Solomon E., Kirkpatrick Bldg. 64501

Minton, Robert S., Corby Bldg. 64501
Moen, Berwyn H., 902 Edmond St. 64501
Morse, Marvin, 2702 Faraon St. 64501
Mothershead, John L., 2603 Frederick Ave. 64501
Muench, Albert H., Physicians & Surgeons Bldg. 64501
Mundy, Homer F., 2801 Sacramento Ave. 64507
Ness, Carl K., 902 Edmond St. 64501
O'Connor, William B., Kirkpatrick Bldg. 64501
Petersen, Harold E., 2401 Frederick Ave. 64501
Pettit, Manson B., Box 263, 64502
Pfeffer, Robert I., 1915 N. 29th St. 64506
Pifer, Lawrence H., 1302 Faraon St. 64501
Potter, Caryl A., Jr., Pioneer Bldg. 64501
Potter, Thompson E., 731 Faraon St. 64501
Quintana, Manuel M., 920 N. 9th St. 64501
Redmond, William, Corby Bldg. 64501
Riddell, Richard V., 902 Edmond St. 64501
Rogers, John T., 2502 Ashland Ave. 64506
Rosenthal, Irwin I., 2715 Union Ave. 64506
Rost, William B., 2221 N. W. Extension Blvd. 64506
Ryan, John H., 301 N. 8th St. 64501
Senne, Herbert C., 223 N. 7th St. 64501
Senor, Samuel E., 722 Francis St. 64501
Shevlin, Charles F., 902 Edmond St. 64501
Sklenar, Donald E., 228 Illinois Ave. 64504
Smith, Clifton, 2821 Ashland Ave. 64506
Stacy, Winton T., 1215 N. 24th St. 64506
Stallard, Donald J., 902 Edmond St. 64501
Tadlock, Baxter W., 316 W. Noyes St. 64501
Tahir, Mohammed, 1415 N. 24th St. 64506
Thomas, Forrest, State Hosp. No. 2, 64506
Thompson, F. Gregg, Jr., P. O. Box 830 64502
Thompson, F. Gregg, III, 902 Edmond St. 64501
Tovar, Manuel, 324 N. 6th St. 64501
Tschetter, David J., P. O. Box 830 64502
Wadlow, Ernest E., 510 Francis St. 64501
Waggoner, Sharon E., 301 Illinois Ave. 64504
Wallace, Hilen K., 7662 E. Northland Dr., Scottsdale, Ariz.
Weed, Randal W., 702 Jule St. 64501
Weinand, Ernest E., 902 Edmond St. 64501
Whitsell, Ora E., 802 N. 23rd St. 64506
Willman, Charles R., 2405 Frederick Ave. 64501
Willumsen, Henry C., 902 Edmond St. 64501

BUTLER-WAYNE-RIPLEY COUNTY MEDICAL SOCIETY
(Poplar Bluff 63901)

Barbour, Marvin R., Kneibert Clinic
Beecher, Sheldon B., 1517 Rosedale Ave.
Biggs, Fred J., Jr., Kneibert Clinic
Boone, Richard, 403 Mt. Valley St., Hot Springs, Ark.
Brandon, Walter L., P. O. Box 407
Brookreson, Alton F., 321 Oak St.
Caldwell, Fred, Kneibert Clinic
Canlas, Emilio M., 705 Pine Blvd.
Cline, Harold H., Piedmont 63957
Dinelli, Frank E., 215 Oak St.
Engelhardt, Robert C., Kneibert Clinic
Gernstetter, Sangwill L., P. O. Box 473
Hansbrough, Eugene T., 623 Pine Blvd.
Harwell, J. Lester, 40 Plaza Sq., St. Louis 63103
Hecker, Joseph E., Kneibert Clinic
Henrickson, Hardin O., Valley Plaza Shopping Center
Kneibert, Fred L., Kneibert Clinic
Leroux, Gene, Doniphan 63935
Loughead, John R., W. Maude St.
McLain, Bobby M., 724 Cynthia St.
McPheeters, James W., Sr., 330 N. 2nd St.
Macauley, Bernard J., 215 Oak St.
Markel, Arthur D., Kneibert Clinic
May, Albert L., Jr., 330 N. Second St.
Miller, David V., Kneibert Clinic
Minetree, Thomas A., 623 W. Pine Blvd.
Parker, Arthur C., Jr., Kneibert Clinic
Ploussard, John H., 215 Oak St.
Post, Cyril A., 123 S. Broadway
Robertson, William D., Poplar Bluff
Ruff, T. Eugene, Kneibert Clinic
Tapp, Ernest M., 1401 Lurlyn Rd.
Tenpenny, J. W., Poplar Bluff Hosp.
Tosh, John W., 217 Oak St.
Tuma, Arthur T., 215 Oak St.
Turner, James H., 217 Oak St.
Turner, William F., 217 Oak St.

CALDWELL COUNTY
(Grand River Medical Society)

CALLAWAY COUNTY MEDICAL SOCIETY
(Fulton 65251)

Brown, John J., 101 E. 6th St.
Brown, Katherine S., 1304 Vine St.
Cremer, William J., State Hosp. No. 1
Crews, Robert N., 612 Court St.
Durst, Henry, 610 Court St.
Gish, Rutledge, 5 E. 5th St.
Groce, George, 607 Court St.
Hill, James E., 607 Court St.
Jackson, Vernon B., State Hosp. No. 1
Kepler, Earl C., State Hosp. No. 1
Osbourn, Richard A., 102 S. Addition
Peterson, Donald B., State Hosp. No. 1
Ritterbusch, James K., State Hosp. No. 1
Robertson, Robert C., State Hosp. No. 1
Rusk, Earl M., Camdenton 65020
Schuetz, Alfred, State Hosp. No. 1
Sydow, Henry A., 11 E. 5th St.
Tellez, Edward R., 207 Lynn Ave.
Tuttle, Jay F., State Hosp. No. 1
Wood, George F., 614 Market St.

CAMDEN COUNTY

Garrison, T. W., Camdenton 65020 (Member Mid-Missouri County Medical Society)
Holley, Donald B., Camdenton 65020 (Member Mid-Missouri County Medical Society)
Rusk, Earl M., Camdenton 65020 (Member Callaway County Medical Society)
Wayland, Thomas A., Camdenton 65020 (Member Cole County Medical Society)

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY
(Cape Girardeau 63701)

Alyea, J. O., 1869 Drury La.
Ashley, Hugh V., 234 N. Sprigg St.
Ashley, Hugh, Jr., 234 N. Sprigg St.
Bahn, Charles F., 1902 W. Broadway
Barnes, Seth S., 1854 Broadway
Blankenship, Dale M., 1930 Broadway
Burford, Edwin K., Jr., 937 Broadway
Campbell, Edward D., 937 Broadway
Chapman, Jean A., 1902 W. Broadway
Cochran, Jo. R., 24 N. Sprigg St.
Crites, Edward, Sedgewickville 63781
Crowe, John T., 937 Broadway
Elrod, Dennis B., Box 547, Placida, Fla.
Estes, Albert M., 714 Broadway
Ford, Walter W., Gordonville 63752
Hall, Frank W., 1912 Broadway
Herbert, Charles T., 824 Good Hope St.
Holcomb, John K., 24 N. Sprigg St.
Hoxworth, Gerald M., 210 Christine St.
Jaeger, Joseph N., 208 S. High St., Jackson 63755
Johnson, Earl W., 937 Broadway
Juden, Alexander G., 4 S. Spanish St.
Jung, J. Marshall, Box 368, Illmo 63754
Kasten, Melvin C., 1209 Sailer Circle
Keim, John H., 230 N. Sprigg St.
Kinder, James A., 937 Broadway
Kratz, Paul E., 1912 Broadway
Laffoon, Robert G., Charity Hosp., T.B. Annex, Lafayette, La.
Lovinggood, Thomas A., 649 Sylvan La.
McDonald, Eugene F., 125 Court St., Jackson 63755
McGinty, Charles P., 1834 Broadway
Magaletta, George E., 937 Broadway
Nunnelly, Gordon M., 1924 Broadway
Nussbaum, Paul B., 1858 Broadway
Oehler, William F., 234 N. Middle St.
Otto, Thomas G., 1912 Broadway
Parsons, D. LeRoy, 24 N. Sprigg St.
Rapp, Harold B., 1011 N. Henderson
Rawlins, Fred E., 1607 Berthing Ave.
Reynolds, Garland A., 826 Themis St.
Ridings, Harold D., 937 Broadway
Ritter, Raymond A., 1912 Broadway
Seabaugh, Dayton I. L., 106 E. 1st No., Jackson 63755
Seabaugh, L. R., 219 N. Pacific St.
Seabaugh, Oda L., 24 N. Sprigg St.
Seabaugh, William O. L., 24 N. Sprigg St.
Shoss, Milton, 937 Broadway
Sparkman, Thomas C., 210 Christine St.
Stewart, Wendell K., 937 Broadway
Terry, James W., Jr., 219 N. Pacific St.
Tygett, Glenn J., 215 N. Sprigg St.
Tygett, Joseph N., 1834 Broadway
Weeks, George R., 1728 Bessie Ave.
Williams, W. A., Jr., 24 N. Sprigg St.
Wilson, Charles F., 714 Broadway
Wolff, Paul G., 1819 Broadway

CARROLL COUNTY
(Grand River Medical Society)

CARTER-SHANNON COUNTY MEDICAL SOCIETY

Rollins, H. D., Winona 65588

CASS COUNTY
(West Central Missouri Medical Society)

CEDAR COUNTY
(West Central Missouri Medical Society)

CHARITON-MACON-MONROE-RANDOLPH COUNTY MEDICAL SOCIETY

Arnold, Eugene L., V.A. Hosp., Jefferson Barracks 63125
Baker, Josephine D., Moberly 65270
Barnett, Floyd A., Paris 65275
Campbell, James E., Macon 63552
Chute, W. Deward, Moberly 65270
Cohrs, Clarence C., Moberly 65270
Collins, Gretchen D., Macon 63522
Dreyer, Philip V., Huntsville 65259
Eggleston, Donald E., Macon 63522
Fleming, J. Will, Jr., Moberly 65270
Fleming, Thomas S., Moberly 65270
Harms, Florian L., Salisbury 65281
Hasson, Robert, Moberly 65270
Huber, Lasley E., Moberly 65270
Miller, D. Herbert, 4410 Denison St., Muskogee, Okla.
Miller, Howard S., Macon 63522
Ragsdale, George M., Paris 65275
Rice, Grover C., Brunswick 65236
Rowlette, Avery P., Moberly 65270
Smith, Carl C., Moberly 65270
Streator, Roderick D., 245 Union Blvd., St. Louis 63108
Stuart, Daniel D., Brunswick 65236
Szymanski, Stanley R., Macon 63522
Young, Robert H., Moberly 65270

CHRISTIAN COUNTY
(Ozarks Medical Society)

CLARK COUNTY
(Lewis-Clark-Scotland County Medical Society)

CLAY COUNTY MEDICAL SOCIETY.

Adams, Howard D., 114 N. Water St., Liberty 64068
Allain, James J., 2022 Swift St., N. Kansas City 64116
Allan, James R., 110 E. Broadway, Excelsior Springs 64024
Arst, Herbert E., 7529 N. Tracy, Kansas City 64118
Balhuizen, John, 2730 S. Mall, Kansas City 64119
Bates, George C., 2730 S. Mall, Kansas City 64119
Boone, Daniel S., 5800 N. Grand Ave., Kansas City 64118
Bowles, Richard P., 112 N. Water, Liberty 64068
Bruce, Paul C., 115 S. Titus Ave., Excelsior Springs 64024
Burke, E. K., 5140 Antioch Rd., Kansas City 64119
Castillo, Michael E., 2522 Vivion Rd., N. Kansas City 64116
Chastain, Maurice W., 2016 Swift Ave., N. Kansas City 64116
Chiles, David R., Box 238, Smithville 64089
Dunham, Robert H., 2025 Swift Ave., N. Kansas City 64116
Dwyer, Reinhardt D., 405 E. 19th St., N. Kansas City 64108
Edwards, Theodore F., 2029 Burlington St., Kansas City 64116
Fakhoury, Donald A., 4030 N. Oak St., Kansas City 64111
Fischer, Edward H., 306 E. 21st Ave., N. Kansas City 64108
Fowler, I. Charles, 2025 Swift Ave., N. Kansas City 64116
Galbol, Harley, Box 950, Excelsior Springs 64024

Gauer, Robert J., 2730 S. Mall, Kansas City 64119
Hall, James W., 6712 N. Oak Trafficway, Kansas City 64118
Hayes, Lawrence L., 8400 N. Oak Trafficway, Kansas City 64155
Hedges, Richard C., 402 St. Louis Blvd., Excelsior Springs 64024
Hendren, Glenn W., 114 N. Water St., Liberty 64068
Hobbs, Earl B., Smithville 64089
Hodge, Robert H., 2204 E. 39th St., N. Kansas City 64109
Houck, Russell M., V. A. Hosp., Kecoughtan, Va.
King, Phillip E., 101 W. Kansas St., Liberty 64068
Knox, Earl R., Rialto Bldg., Kansas City 64106
Kuenzi, Donald E., 8630 N. Oak Trafficway, Kansas City 64155
Langhus, Melvin O., 104 W. Englewood Rd., N. Kansas City 64118
McCormick, James E., 4030 N. Oak St., Kansas City 64111
McCracken, Samuel R., 107 W. Spring St., Excelsior Springs 64024
Marsh, Wallace S., 4157 Strategic Wing, APO 937, Seattle, Wash.
Matera, Arnold W., 2025 Swift Ave., N. Kansas City 64116
Mullins, Bernard L., 405 E. 19th St., N. Kansas City 64108
Musgrave, David E., Excelsior Springs 64024
Parker, Robert H., 2005 Fayette, N. Kansas City 64116
Pate, Otho S., Pioneer Bldg., N. Kansas City
Perry, Lawrence L., Jr., 6300 N. Lenox, Kansas City 64151
Pileggi, Felix A., 405 E. 19th Ave., N. Kansas City 64108
Porter, Russell C., 1351 Weeburn Rd., Seal Beach, Calif.
Revare, Paul, 4100 Vivion Rd. E., Kansas City 64119
Richardson, William D., Baptist Medical Center, Nalerigu Via Gambaga, Ghana, W. Africa
Roberts, L. Marvin, 5140 Antioch Rd., Kansas City 64119
Robichaux, Eugene B., 116 South St., Excelsior Springs 64024
Robinson, Van M., 4124 Vivion Rd., Kansas City 64119
Sanders, George E., 116 South St., Excelsior Springs 64024
Sawyer, Floyd E., 2730 S. Mall, Kansas City 64119
Schertz, Truman B., 2022 Swift, N. Kansas City 64116
Slaughter, Carl R., 405 E. 19th Ave., N. Kansas City 64108
Spelman, Archibald E., Smithville 64089
Sportsman, Weldon L., 6309 N. Grand Ave., Kansas City 64118
Waterman, Franklin M., Liberty 64068
Waugh, George L., 2730 S. Mall, Kansas City 64119
Werner, Dean F., 2025 Swift Ave., N. Kansas City 64116
Werner, Franklin C., 5140 Antioch Rd., Kansas City 64119
Williams, John M., 32 S. Main, Liberty 64068
Withrow, John B., 5140 Antioch Rd., Kansas City 64119
Zacharias, David L., Rt. 22, Box 209, Kansas City 64141

CLINTON COUNTY MEDICAL SOCIETY

Kimes, Ira D., Cameron 64429
Luckenbill, Paul T., Plattsburg 64477
Mabrey, John P., Plattsburg 64477
Ozenberger, Larry A., Plattsburg 64477
Spalding, Wilber B., Plattsburg 64477

COLE COUNTY MEDICAL SOCIETY
(Jefferson City 65101)

Belden, Edgar A., State Office Bldg.
Belinson, Louis, 722 Jefferson St.
Bowe, Edwin E., 401 N. Ridgway St.
Bregant, Robert E., 1017 Laurel Dr.
Bruce, James G., 1921 W. Main St.
Clark, Kendall A., 515 E. High St.
Cox, William A., 105 E. High St.
Doyle, Matthew J., 515 E. High St.
Enloe, Lawrence D., Trust Bldg.
Exon, C. Stuart, 515 E. High St.
Fullgrabe, E. A., State Office Bldg.
Garner, Lynn M., State Division of Health
Gordon, James S., 515 E. High St.
Guhleman, Henry V., Jr., Medical Arts Bldg.
Gurnee, Landon H., 515 E. High St.
Handler, Fred P., 614 Boonville Rd.
Kanagowa, Hajime H., Medical Arts Bldg.
Kelly, Marshall W., 507 E. High St.
Klebba, Larry B., P. O. Box 403, 65102
Leslie, J. Paul, 933 Fairmont Blvd.
Leslie, James T., 4612 Hanford La., Louisville, Ky.
Leslie, James T., Jr., 214 Jackson St.
Loyd, Earl L., Jefferson Bldg.
McHaney, John W., 606 E. High St.
McKnelly, William V., 507 E. High St.
Mansur, Edward E., RFD 2, Box 629D, Stuart, Fla.
Matthews, John I., 302 Bolivar St.
Maxey, Hugh W., Box 236 65102
Meier, Francis X., 1913 Haysilton Dr.
Meinershagen, Charles W., 138 Forest Pl.
Melia, Bernard J., Jr., Medical Arts Bldg.
Ossman, Julian A., 2505 W. Main St.
Russell, Joseph P., Division of Health
Sanders, J. S., 515 E. High St.
Schmidt, J. H., 515 E. High
Sennott, John S., 515 E. High St.
Shull, George D., 521 E. High St.
Stauffer, Harry B., Central Trust Bldg.
Stricker, Harold C., 515 E. High St.
Sugarbaker, Everett D., 503 E. High St.
Summers, Joseph S., Jr., 515 E. High St.
Tanner, Robert H., 1608 Greenberry Rd.
Taylor, Leon A., 129 E. High St.
Tietjen, Frederick O., 213 Jackson
Watts, Byron E., 515 E. High St.
Wayland, Thomas A., Box 239, Camdenton 65020
Winegar, Alvon C., 515 E. High St.

COOPER COUNTY MEDICAL SOCIETY
(Boonville 65233)

Abele, William A., 329 Main St.
Avery, Willard B., 329 Main St.
Beckett, Theodore C., 317 Main St.
Boley, James O., 3200 E. Meyer Blvd., Kansas City 64132
Chamberlain, Gilbert L., 510 E. Spring
Diekroeger, Manual L., R.D. 1
Draper, Bernard, 329 Main St.
Draper, Gary A., 329 Main St.
Hata, Daikichi, 329 Main St.
Humphreys, Edward T., 329 Main St.
Stuart, Byron M., 329 Main St.
Winn, George W., 329 Main St.

CRAWFORD COUNTY
(Mid-Missouri County Medical Society)

DADE COUNTY
(Barton-Dade County Medical Society)

DALLAS-HICKORY-POLK COUNTY MEDICAL SOCIETY

Barnett, Charles H., Bolivar 65613
Brooks, John M., 840 S. Pickwick St., Springfield 65804
Griffin, Evelyn, Buffalo 65622
Griffin, Olin A., Jr., Buffalo 65622
Harrell, Henry J., Belleview, Fla.
Koon, Ben H., Bolivar 65613
McCraw, Doyle C., Bolivar 65613
Robinson, George G., Humansville 65674

DAVIESS COUNTY
(Grand River Medical Society)

DEKALB COUNTY
(Grand River Medical Society)

DENT COUNTY
(Mid-Missouri County Medical Society)

DOUGLAS COUNTY
(South Central Counties Medical Society)

DUNKLIN COUNTY MEDICAL SOCIETY

Baldwin, Paul, Kennett 63857
Beal, Homer, Malden 63863
Benson, Leo J., Jr., Kennett 63857
Cash, Charles R., Kennett 63857
Croom, Dorwyn W., Malden 63863
Crow, Asa A., Cardwell 63829
Dunmire, George Q., Kennett 63857
English, Wallace D., Cardwell 63829
Hopkins, Florian G., Gideon 63848
Joffe, Irwin, 617 W. Main St., Paragould, Ark.
Miltenberger, Paul C., Kennett 63857
Morehead, William E., Malden 63863
Palenske, Robert L., Hornersville 63855
Peck, Chester R., Jr., Kennett 63857
Rutledge, William J., Campbell 63933
Spence, Elbert L., Kennett 63857
Swafford, Owen J., Senath 63876
Tarver, Quinton, Kennett 63857
Williams, Charles S., Malden 63863
Wilson, Loys C., Kennett 63857
Zimmerman, Joseph A., Kennett 63857

FRANKLIN-GASCONADE-WARREN COUNTY MEDICAL SOCIETY

Bonney, Samuel C., Washington 63090
Bozzo, Raymond J., Washington 63090
Brenner, Paul A., Owensville 65066
Crawford, Robert M., Sullivan 63080
de la Torre, John J., Sullivan 63080
Denny, Hubert M., Union 63084
Eisenmann, Benjamin P., New Haven 63068
Eyermann, H. Walter, Warrenton 63383
Giem, Ross N., Sullivan 63080
Heutel, Lee B., Union 63084
Hoelscher, Harold F., Warrenton 63383
Johnson, Grover C., Marthasville 63357
Mays, Frank G., Washington 63090
Mitchell, Thomas J., St. Clair 63077
Moellenhoff, Robert W., Washington 63090
Muench, Ludwig O., Washington 63090
Murney, Joseph A., Union 63084
Pearl, John F., St. Clair 63077
Post, John P., Washington 63090
Richardson, George A., Union 63084
Richardson, William R., Union 63084
Royse, Roy P., Sullivan 63080
Ryan, John B., Washington 63090
Schmidt, Charles A., Gerald 63037
Shaw, Carvel T., Hermann 65041
Shea, James G., Gerald 63037
Steinbeck, Herbert D., 21 Hilltop Dr., Chappaqua, N. Y.
Strehlman, Benjamin G., Union 63084
Wepprich, Michael S., Washington 63090
Workman, George M., Hermann 65041

GASCONADE COUNTY
(Franklin-Gasconade-Warren County Medical Society)

GENTRY COUNTY
(Northwest Missouri Medical Society)

GRAND RIVER MEDICAL SOCIETY
(Caldwell-Carroll-Livingston-Grundy-Daviess-Harrison-Linn-Mercer-DeKalb Counties)

Allen, Erroll W., Carrollton 64633
Bales, Eugene L., Carrollton 64633
Bohnsack, Ralph W., Brookfield 64628
Brennan, Raymond J., Chillicothe 64601
Brewer, Lake, Ridgeway 64481
Brownfield, Samuel T., Brookfield 64628
Broyles, Watkins A., Bethany 64424
Carpenter, George W., Chillicothe 64601
Carter, Howard, Hamilton 64644
Clark, Chester L., Trenton 64683
Conrad, Joseph, Chillicothe 64601
Cross, Albert D., Trenton 64683
Daley, Frank R., Hamilton 64644
Dixon, John R., Brookfield 64628
Dowell, Donald M., Chillicothe 64601
Dowell, J. Larry, Pattonsburg 64670
Duffy, Oliver F., Trenton 64683
Ellsworth, Willard, Cainsville 64632
Fair, William L., Chillicothe 64601
Fuson, William A., Trenton 64683
Gale, Joseph F., Chillicothe 64601
Gary, George, Marceline 64658
Gearhart, Merrian, Bethany 64424
Hoenig, Hector F., Jr., Bethany 64424
Horner, Glennon A., Marceline 64658
Howell, Billy D., Brookfield 64628
Kimberlin, Herbert C., Trenton 64683
McArtor, Thomas R., Browning 64630
Magill, Joseph S., Milan 63556
Mairs, Edgar J., Trenton 64683
Mandler, George, Chillicothe 64601
Nixon, Edward E., Gallatin 64640

Pemberton, Charles W., 1111 Army-Navy Dr., Arlington, Va.
Platz, John H., Carrollton 64633
Shiflet, Albert W., Wheeling 64688
Smith, Robert W., Marceline 64658
Staton, R. Hamilton, Carrollton 64633
Sutherland, Gladys P., Bethany 64424
Sweiger, James H., Maysville 64469
Thompson, Emma A. B., Dumas Apts., Columbia 65201
Todd, Paul C., Carrollton 64633
Vandiver, Virgil D., Chillicothe 64601
Vinyard, Jack L., Carrollton 64633
Wilson, Fred K., Winston 64689
Zahrt, Frank H., Princeton 64673

GREENE COUNTY MEDICAL SOCIETY (Springfield)

Allen, Jerry H., 1211 S. Glenstone St. 65802
Allison, James B., 600 S. Glenstone St. 65802
Anthony, Dallas D., Professional Bldg. 65806
Ash, Charles J., Professional Bldg. 65806
Ashley, Thomas E., 1211 S. Glenstone St. 65802
Atkinson, Thomas E., Jr., 609 E. Cherry St. 65806
Auner, Cecil R., 600 S. Glenstone St. 65802
Baldwin, Richard, 600 S. Glenstone St. 65802
Blades, Ross D., 1211 S. Glenstone 65802
Bonebrake, MacDonald, Professional Bldg. 65806
Brown, Alex L., 1636 S. Glenstone St. 65804
Brown, James T., 1653 S. National St. 65804
Brown, Lyman D., 311 College St. 65806
Burkey, Jordan W., Professional Bldg. 65806
Busiek, Erwin F., Professional Bldg. 65806
Busiek, Paul J., Professional Bldg. 65806
Busiek, Urban J., Professional Bldg. 65806
Callaway, Guy D., 1155 S. Delaware St. 65804
Callaway, Guy D., Jr., 1211 S. Glenstone St. 65802
Christy, Raymond A., Jr., 1211 S. Glenstone St. 65802
Clarke, Michael J., 1636 S. Glenstone St. 65804
Clary, William F., 1636 S. Glenstone St. 65804
Clawson, James W., Professional Bldg. 65806
Clayton, Edgar L., Professional Bldg. 65806
Cochran, Thomas E., Jr., 2423 Brentwood Blvd. 65804
Coller, Frederick C., 2433 Marlan St. 65802
Conrad, Raymond C., 609 Cherry St. 65806
Crawford, Oral B., Professional Bldg. 65806
Cunningham, Darrel D., 1715 Boonville Ave. 65803
Delzell, William A., Box 34, Rt. 1, Willard 65781
Dietz, M. Wendell, Burge Protestant Hosp. 65803
Dillard, Erin M., Professional Bldg. 65806
Dills, Joseph N., 1715 Boonville Ave. 65803
Dolan, Daniel L., Professional Bldg. 65806
Duncan, Robert D., 1534 E. Sunshine Blvd. 65804
Eastwood, Robert A., 3043 Wilshire 65804
Elkins, Ronald F., Professional Bldg. 65806
Ellis, Francis J., Professional Bldg. 65806
Ellis, Harry L., Professional Bldg. 65806
Evans, Ezra L., Jr., Professional Bldg. 65806
Farthing, Fred R., 1234 E. Walnut St. 65802
Farthing, Gene W., 1636 S. Glenstone St. 65804
Ferguson, John P., Jr., 1219 S. Clay St. 65804
Ferrell, Thomas E., Jr., 1534 E. Sunshine Blvd. 65804
Fessenden, Ersel M., 634 Kingsbury 65804
Fitch, C. H. Max, 1711 Boonville Ave. 65803
Focht, Ralph H., Strafford 65757
Francis, William C., 600 S. Glenstone St. 65802
German, Walter A., Jr., 1211 S. Glenstone St. 65802
Giddings, Frank C., Burge Protestant Hosp. 65803
Glenn, Elmer E., Cedar Point Rd., Forsyth 65653
Glynn, Robert R., 1211 S. Glenstone St. 65802
Gorelick, David F., Professional Bldg. 65806
Gose, Don F., 1550 E. Sunshine Blvd. 65804
Hahn, Andrew L., Professional Bldg. 65806
Hall, David W., 2122 Wayland Dr. 65804
Hall, Durward G., 2442 S. Fremont St. 65804
Hanan, Ernest B., 724 E. Kingsbury 65804
Hanss, Armand W., 600 S. Glenstone St. 65802
Hartley, L. Howard, 1550 E. Sunshine Blvd. 65804
Harvey, Harold D., 1531 E. Sunshine Blvd. 65804
H'Doubler, Charles E., Professional Bldg. 65806
H'Doubler, Francis T., Jr., Professional Bldg. 65806
H'Doubler, Peter B., 430 South Ave. 65806
Hogeboom, George W., P. O. Box 1017, Delray Beach, Fla.
Hollis, Richard W., Professional Bldg. 65806
Holmes, Daniel E., 600 S. Glenstone St. 65802
Holmes, David R., 1636 S. Glenstone St. 65804
Hoover, H. Lee, Jr., 1330 E. Walnut St. 65802
Horst, Otto C., Medical Arts Bldg. 65806
Horton, James D., Professional Bldg. 65806
Hulstra, Johannes F. W., 1211 S. Glenstone St. 65802
Ivy, Henry B., 600 S. Glenstone St. 65802
Jameson, James E., Professional Bldg. 65806
Johnson, George A., 2734 Luster Ave. 65804
Johnson, George L., Martin Army Hosp., Fort Benning, Ga.
Johnson, Warford B., Professional Bldg. 65806
Johnson, William F., Professional Bldg. 65806
Johnston, Joseph L., 2855 Southern Hills Blvd. 65804
Jorel, Louis E., 1500 E. Sunshine Blvd. 65804
Key, James S., 609 Cherry St. 65806
Klingner, George M., 1630 N. Jefferson St. 65803
Knabb, Arthur D., 1630 N. Jefferson St. 65803
Knabb, Harris, 1630 N. Jefferson St. 65803
Knabb, Henry F., Jr., 1630 N. Jefferson St. 65803
Knabb, Kenneth E., 1630 N. Jefferson St. 65803
Kolze, Vernon W., 600 S. Glenstone St. 65802
Langston, Walter R., Professional Bldg. 65806
Leidinger, Karl J., Republic 65738
Lemmon, George B., 1101 E. Walnut St. 65802
Lemmon, G. Bruce, Jr., Professional Bldg. 65806
Leslie, James F., 1715 Boonville Ave. 65803
Lewis, Noel R., Burge Protestant Hosp. 65803
Litton, Lyle D., Burge Protestant Hosp. 65803
Lockhart, Charles E., Professional Bldg. 65806
Lorenc, Ernest, Professional Bldg. 65806
Lowe, Horace A., Jr., Medical Arts Bldg. 65806
Lurie, Harold H., 600 S. Glenstone St. 65802
McAlhany, Howard J., 609 Cherry St. 65806
McKinsey, John J., Professional Bldg. 65806
Maddux, William P., Professional Bldg. 65806
Maher, Robert W., Professional Bldg. 65806
Maple, Francis M., 1211 S. Glenstone St. 65802
Menchetti, Don E., 1630 N. Jefferson Ave. 65803
Meyer, Claude B., Route 1, Nixa 65714
Morton, Paul C., 1508 E. Stanford 65804
Moseley, F. Thomas, 2837 Lomita Ct. 65804
Musick, James D., Medical Arts Bldg. 65806
Napper, Marvin L., Professional Bldg. 65806
Neu, Leo T., Jr., 3008 Carlisle Circle 65804
Overend, Don S., 1211 S. Glenstone St. 65802
Palcheff, Chris L., 1636 S. Glenstone St. 65804
Park, William I., Jr., Professional Bldg. 65806
Penninger, William H., 600 S. Glenstone St. 65802
Peterson, Stanley S., 1211 S. Glenstone St. 65802
Podrecca, Guido I., Professional Bldg. 65806
Polk, John W., 609 Cherry St. 65806
Powell, Edwin M., Professional Bldg. 65806
Prater, Bill G., Professional Bldg. 65806
Pruett, Paul L., Professional Bldg. 65806
Rainwater, E. H., Professional Bldg. 65806
Rigney, Levi M., Woodruff Bldg. 65806
Rosen, Max, Professional Bldg. 65806
Russell, Earl D., 1503 S. Glenstone St. 65804
Sala, Jose M., 1423 N. Jefferson Ave. 65803
Scanlon, Robert C., 1711 Boonville St. 65803
Schroff, Carle H., 1630 N. Jefferson Ave. 65803
Schwartz, Eugene J., Professional Bldg. 65806
Schweitzer, Fred C., Jr., Woodruff Bldg. 65806
Sewell, Walter S., 2707 S. Marlan St. 65804
Siceluff, Joseph G., 609 Cherry St. 65806
Silsby, Don H., 719 S. Dollison St. 65804
Silsby, Don J., Professional Bldg. 65806
Silsby, Harry D., Professional Bldg. 65806
Simpson, Albert P., 318 St. Louis St. 65806
Simpson, Emerson L., 1630 N. Jefferson Ave. 65803
Smith, C. Souter, 620 St. Louis St. 65806
Snead, William H., Jr., Professional Bldg. 65806
Stewart, Robert B., 600 S. Glenstone St. 65802
Stewart, R. Wendell, Professional Bldg. 65806
Stufflebam, Robert E., 2248 Mirabeau St. 65804
Sturtevant, Harwood N., Professional Bldg. 65806
Sundstrom, Frank D., 1211 S. Glenstone St. 65802
Tarrasch, Ernest L., 1636 S. Glenstone St. 65804
Taylor, William E., Southwest Missouri State College
Thomasson, David D., 600 S. Glenstone St. 65802
Tillman, Walter W., Jr., Professional Bldg. 65806
Tombridge, Thomas L., Professional Bldg. 65806
Trotter, W. Yates, Professional Bldg. 65806
Tsang, John L. K., 1636 S. Glenstone St. 65804
Turner, Glenn O., Professional Bldg. 65806
Vail, A. Denton, Professional Bldg. 65806
Vensel, Lee H., 600 S. Glenstone St. 65802
Waddell, Kenneth E., 1211 S. Glenstone St. 65802

Wakeman, J. Newton, 600 S. Glenstone St. 65802
Walker, William M., Professional Bldg. 65806
Warres, Herbert L., 2614 Englewood Rd. 65804
Waterfield, Jim R., 1211 S. Glenstone St. 65802
Webb, Leslie R., Jr., Professional Bldg. 65806
White, R. Ned, Professional Bldg. 65806
Williams, John W., 600 S. Glenstone St. 65802
Williams, John W., Jr., 1227 Roanoke 65804
Wilson, Roy E., 1211 S. Glenstone St. 65802
Wise, Gordon F., Professional Bldg. 65806
Wittmer, Samuel C., 600 S. Glenstone Ave. 65802
Wood, William W., 1211 S. Glenstone St. 65802
Wooldridge, Wilfred E., Professional Bldg. 65806
Yancey, Daniel L., 1211 S. Glenstone St. 65802
Zahn, Robert L., Professional Bldg. 65806

GRUNDY COUNTY
(Grand River Medical Society)

HARRISON COUNTY
(Grand River Medical Society)

HENRY COUNTY MEDICAL SOCIETY

Bradshaw, William D., Clinton 64735
Brock, Bernard, Windsor 65360
Hollingsworth, Ray S., Clinton 64735
Hughes, Shelby B., Clinton 64735
Jones, Edna M., Clinton 64735
King, Richard H., Clinton 64735
Smith, James O., Clinton 64735
Smith, William J., Windsor 65360
Thurber, Claude M., Windsor 65360
Walker, George S., Clinton 64735
Walker, Hugh B., Clinton 64735
Woltzen, Simon W., Clinton 64735

HICKORY COUNTY
(Dallas-Hickory-Polk County Medical Society)

HOLT COUNTY
(Northwest Missouri Medical Society)

HOWARD COUNTY MEDICAL SOCIETY

Bloom, W. A., Fayette 65248
Dean, Francis D., Fayette 65248
Leech, Maurice P., Fayette 65248
Marshall, William G., Glasgow 65254
Shaw, William J., Fayette 65248
Shaw, William J., Jr., Fayette 65248
Wells, Donald E., Glasgow 65254

HOWELL COUNTY
(South Central Counties Medical Society)

IRON COUNTY
(Mineral Area County Medical Society)

JACKSON COUNTY MEDICAL SOCIETY
(Kansas City)

Aaron, George A., 10901 Winner Rd., Independence 64052
Adelman, Arthur, 333 W. Meyer Blvd. 64113
Adler, Federico, 701 E. 63rd St. 64110
Agee, Loren G., 5801 E. 113th St. 64134
Ahlefeld, Charles B., One Penn Valley Park 64141
Aisenstadt, E. Albert, 333 W. Meyer Blvd. 64113
Aks, Daniel, 751 E. 63rd St. 64110
Alberg, Marvin R., One Penn Valley Park 64141
Allebach, H. K., Meyer Blvd. at Prospect 64132
Allen, Robert E., 4320 Wornall Rd. 64111
Allen, William B., 4620 Nichols Parkway 64112
Alsop, Webb S., Jr., 3604 W. 53rd St., Shawnee Mission, Kan. 66205
Altomare, Edward P., 2610 E. 63rd St. 64130
Altringer, Arthur N., 5630 Mission Dr., Shawnee Mission, Kan. 66208
Ammatelli, Francis J., 7546 Troost St. 64131
Anderson, Raymond B., 4320 Wornall Rd. 64111
Anderson, Richard W., 1001 Romany Rd. 64113
Andrews, Berneil W., 4320 Wornall Rd. 64111
Andrus, Bailey C., 4320 Wornall Rd. 64111
Arms, Arnold V., 4320 Wornall Rd. 64111
Aschman, Theodore H., Plaza Time Bldg. 64112
Asher, A. Graham, Professional Bldg. 64106
Atcheson, Bellefield, 11123 Locust St. 64131
Atwell, Floyd C., 4620 Nichols Parkway 64112
Aull, John, 6544 Summit, 64113
Averill, Keith H., 6400 Prospect Ave. 64132
Bachmann, Paul L., 1212 W. Truman, Independence 64050
Baer, Alvin J., 751 E. 63rd St. 64110
Baker, Philip J., 11440 E. 47th St. 64133
Ball, James E., 2707 Pearl, Joplin 64803
Ballard, V. Bryce, 4320 Wornall Rd. 64111
Bare, Chester I., Jr., 10501 E. 78th Terr. 64138
Barelli, Pat A., 4177 Broadway 64111
Barloon, James H., 9406 E. 63rd St. 64133
Barnard, John L., Jr., 4312 Nichols Parkway 64111
Barnes, Robert H., 6714 Kenwood Ave. 64131
Barnett, Gordon P., 751 E. 63rd St. 64110
Barry, Gerald W., 1948 E. Parvin Rd. 64116
Barry, William B., 4600 Nichols Parkway 64112
Bass, Walter R., 9503 E. 63rd St. 64133
Baum, Frank E., 701 E. 63rd St. 64110
Baumhardt, Edward E., 4320 Wornall Rd. 64111
Bay, Merrill R., 1808 W. Main, Blue Springs 64015
Becker, Richard R., 5622 Holmes St. 64110
Becker, Rolfe A., 751 E. 63rd St. 64110
Bell, William F., 615 W. Third St., Lee's Summit 64063
Bennett, James D., 409 E. 63rd St. 64110
Benoit, Hector W., Jr., 4620 Nichols Parkway 64112
Berenson, Sheldon E., 4620 Nichols Parkway 64112
Bergmann, Victor H., 105 Ward Parkway 64112
Bernreiter, Michael, 1246 W. 63rd St. 64113
Berry, Guy N., 4320 Wornall Rd. 64111
Berry, Maxwell G., 4320 Wornall Rd. 64111
Biggs, Alfred D., 6400 Prospect Ave. 64132
Biggs, Harry L., 63rd & Evanston 64133
Bikales, Victor W., 751 E. 63rd St. 64110
Bills, Marvin L., Plaza Time Bldg. 64112
Black, Don A., 6400 Prospect Ave. 64132
Black, Eugene C., Professional Bldg. 64106
Blim, Richard D., 4320 Wornall Rd. 64111
Bordy, Marvin D., 701 E. 63rd St. 64110
Borenstine, Joseph, 7307 Holmes St. 64131
Botwin, Arnold E., 701 E. 63rd St. 64110
Boughnou, Harvey P., 315 Nichols Rd. 64112
Bourke, Timothy S., 601 E. Meyer Blvd. 64131
Boutros, Amin, 3112 Linwood Blvd. 64128
Bowser, John F., 411 Nichols Rd. 64112
Boyd, George K., 5111 Independence Ave. 64124
Braby, Howard H., 1612 W. Truman Rd., Independence 64050
Bradford, John F., 4320 Wornall Rd. 64111
Brams, Jack B., 751 E. 63rd St. 64110
Braverman, Abe E., 701 E. 63rd St. 64110
Brewster, Charlotte M., 4320 Wornall Rd. 64111
Bridgens, James G., 2510 E. Linwood Blvd. 64128
Brown, Adrian J., 12 E. 63rd St. 64113
Brown, Elwyn S., 1710 Independence Ave. 64106
Brown, Irwin S., Plaza Time Bldg. 64112
Brown, Robert S., 4706 Broadway 64112
Broyles, Glen H., 6140 Raytown Rd. 64133
Brumm, Lawrence W., 6400 Prospect 64132
Bruner, Robert E., 912 Valentine Rd. 64111
Brust, Carl H., 6114 Howe Dr., Mission, Kan. 66205
Bryan, William H., Jr., 3939 Prospect Ave. 64130
Buckingham, William W., 1103 Grand Ave. 64106
Buckner, Robert C., Plaza Parkway Bldg. 64112
Budke, Harold A., 306 E. 12th St. 64106
Buhler, Victor B., 5212 Belleview Ave. 64112
Buie, Bruce R., 5801 E. 113th St. 64134
Bunting, Williston P., 305 W. 43rd St. 64111
Burns, Beryl I., 1510 Bass Ave., Columbia 65201
Butcher, Robert W., 7924 Paseo Blvd. 64132
Butterworth, Nelson S., 4706 Broadway 64112
Byers, Philip L., 4320 Wornall Rd. 64111
Caffrey, Raymond J., 1314 W. Red Bridge 64114
Caldwell, John K., Argyle Bldg. 64106
Calovich, Emery R., 4620 Nichols Parkway 64112
Campbell, Frederick B., 315 Nichols Road 64112
Campbell, John G., 315 Nichols Rd. 64112
Capps, Eugene C., 3001 W. 48th Terr., Shawnee Mission, Kan.
Carbaugh, Glenn C., 7400 E. 12th St. 64126
Carlson, Hjalmar E., Professional Bldg. 64106
Carmichael, Francis A., Jr., 4320 Wornall Rd. 64111
Carrier, Edson C., 315 Nichols Rd. 64112
Caruso, Alfred A., 4526 Paseo 64110
Casady, Gilbert N., 9830 Aberdeen Dr., Prairie Village, Kan. 66206
Casebolt, Buford T., 4000 Baltimore Ave. 64111
Castelaw, Rush E., 3731 Locust St. 64109
Cavaness, Ernest W., 1010 Neptune Dr., Encinitas, Calif.
Centner, Paul J., 2727 Main St. 64108
Chambers, James Q., Jr., 4620 Nichols Parkway 64112
Chandler, Robert A., 4177 Broadway 64111
Chapman, Arthur H., Professional Bldg. 64106
Chapman, Samuel B., 6400 Prospect Ave. 64132
Cheng, Alfred K., 6212 USAF Disp., Shu Linkou Air Station, APO 160, San Francisco, Calif.
Chernoff, Selbert G., 4601 Independence Ave. 64124
Clark, Harold B., 3128 Summit 64111
Clark, Irving H., 5801 E. 113th St. 64134
Clasen, Arthur C., 20 Island Ave., Belle Island, Fla.
Cline, Merle A., 4126 St. John Ave. 64123
Cobb, James R., 6741 Prospect Ave. 64132
Coburn, Donald F., 6400 Prospect 64132
Cochrane, Joseph J., 4706 Broadway 64112
Cockerell, Sanford F., 11200 Winner Rd., Independence 64052
Coffey, Ralph R., Professional Bldg. 64106
Coffin, Theodore A., Professional Bldg. 64106
Cohen, Harry K., 751 E. 63rd St. 64110
Cohen, Hilliard, 1291 W. 72nd Terr. 64114
Cokington, Leovigildo, 1710 Independence Ave. 64106
Colglazier, Mary C., 411 Nichols Rd. 64112
Colom, George A., 4643 Wyandotte St. 64112
Connell, Evan S., Commerce Bldg. 64106
Cooper, Charles S., Professional Bldg. 64106
Cooper, John H., Argyle Bldg. 64106
Cooper, Leo F., 4620 Nichols Parkway 64114
Cortner, Mary C., 701 E. 63rd St. 64110
Counsell, Chester M., 708 W. 17th St. 64108
Cowherd, Joseph B., 634 W. 69th St. Terr. 64113

Cox, Kenneth E., 4320 Wornall Rd. 64111
Cox, William L., 1465 Spruce Ave., Liberty 64068
Cremer, Mabelle, 5355 Mission Woods Rd., Shawnee Mission, Kan. 66205
Crocker, Albert M., 2202 E. 31st St. 64109
Crockett, James E., 4320 Wornall Rd. 64111
Culbertson, William F., 1253 Huntington Rd. 64113
Curran, Desmond, Federal Res. Bank Bldg. 64106
Curts, Calvin J., 4706 Broadway 64112
Cutcliff, Daniel J., 415 E. 66th St. 64131
Dalton, Timothy T., 11841 Oak St. 64114
Dann, David S., 701 E. 63rd St. 64110
Davis, Donald R., 4320 Wornall Rd. 64111
Davis, Herbert V., 4620 Nichols Parkway 64112
Davis, Jack M., 9406 E. 63rd St. 64133
Davis, John J., 9011 Delmar, Overland Park, Kan. 66207
Davis, Kenneth A., 209 W. 47th St. 64112
Davis, Richard E., 4643 Wyandotte St. 64112
Davis, Robert C., 659 W. 61th Terr. 64113
Decker, Albert I., 4706 Broadway 64112
DeMaria, Peter F., 8125 E. Gregory Blvd. 64133
DeMott, John D., 411 Nichols Rd. 64112
DeMotte, John A., 315 Nichols Rd. 64112
Devins, George S., 4949 Rockhill Rd. 64110
Diveley, Rex L., 4312 Nichols Parkway 64111
Dixon, Vewiser L., 2204 E. 18th St. 64127
Dlabal, Luke J., 1210 Ash Ave., Independence 64052
Doane, William L., Grandview 64030
Dodge, Mark, 4320 Wornall Rd. 64111
Dodge, Milton, 2005 W. 71st Terr., Shawnee Mission, Kan. 66208
Doering, Robert W., 6400 Prospect Ave. 64132
Dolezal, Joseph B., Bryant Bldg. 64106
Dorsch, Ervin H., 10901 Winner Rd., Independence 64052
Downey, James W., 425 E. 63rd St. 64110
Drake, Roy F., Professional Bldg. 64106
Draney, Thomas E., 425 E. 63rd St. 64110
Drisko, Robert M., 4620 Nichols Parkway 64112
Drowns, Bruce V., 4320 Wornall Rd. 64111
Duer, Mildred C., 310 W. 47th St. 64112
Duncan, William H., 911 Main St. 64105
Dunleavy, James D., 4620 Nichols Parkway 64112
Durnell, Monaford D., 615 W. Third St., Lee's Summit 64063
Dwyer, Frank X., 4620 Nichols Parkway 64112
Dwyer, Hugh L., City Hall Bldg. 64106
Eanet, Morton P., 4825 Troost Ave. 64110
Edde, Clifford G., Argyle Bldg. 64106
Edmonds, Devilla D., 9009 Mission Rd., Leawood, Kan. 66206
Eisemann, Gustave, 751 E. 63rd St. 64110
Elam, James O., 24th & Cherry St. 64108
Eldridge, Charles J., 409 E. 63rd St. 64110
Elias, David J., 9306 E. New 40 Highway, Independence 64050
Elliott, James R., 1080 Busch Garden Ct., Pasadena, Calif. 91105
Elliott, Raymond G., Bryant Bldg. 64106
Elliott, Wade E., 710 W. 12th St. 64105
Ellis, Elmer F., 1326 Lake Dr. 64108
Elser, Otto H., 10901 Winner Rd., Independence 64052
Engel, Lawrence P., 315 Nichols Rd. 64112
Engelking, David F., 9507 E. 63rd St. 64133
Engelmann, Calvin E., 7721 State Line 64114
Eshelman, Albert D., 9306 E. New 40 Highway, Independence 64050
Eubank, David F., 8830 E. 61st St. 64133
Eubank, Dillard M., 9406 E. 63rd St. 64133
Eubank, William R., 7546 Troost Ave. 64131
Eubank, William Y., 6400 Prospect 64132
Farley, Claude C., 6400 Prospect Ave. 64132
Farney, Jacob P., 2721 W. 69th St., Shawnee Mission, Kan. 66208
Farnsworth, Jesse J., 1103 Grand Ave. 64106
Feierabend, Frank L., 2727 Main St. 64108
Feist, George V., 1103 W. 86th Terr. 64114
Ferguson, Donald S., 2012 E. 24th St. 64127
Ferguson, James T., Bryant Bldg. 64106
Ferris, Carl R., 6400 Prospect Ave. 64132
Finkle, Robert H., 10901 Winner Rd., Independence 64052
Fitzgerald, Robert H., 10901 Winner Rd., Independence 64052
Flanders, Virgil E., Professional Bldg. 64106
Flatley, John A., 9406 E. 63rd St. 64133
Fleming, Royall B., 1433 E. 19th St. 64108
Florian, Albert J., 1224 W. 69th Terr. 64113
Folck, William P., 911 Main St. 64105
Forman, Louis H., 4320 Wornall Rd. 64111
Forsythe, Robert W., 4320 Wornall Rd. 64111
Fouts, Dallas B., Sr., 13101 E. 43rd St., Independence 64050
Fowler, Fred D., 4320 Wornall Rd. 64111
Fowler, James W., 1103 Grand Ave. 64106
Franklin, Curtis U., 2415 Park Ave. 64127
Fredeen, Robert C., 411 Nichols Rd. 64112
Frick, John P., Professional Bldg. 64106
Friedman, Morris L., 701 E. 63rd St. 64110
Fritzlen, Thomas J., 6848 Locust St. 64131
Fuhrman, Donald L., 4320 Wornall Rd. 64111
Fulton, Albert E., 4620 Nichols Parkway 64112
Fury, Tex E., 642 Huntington Rd. 64113
Gainey, Harold L., 4320 Wornall Rd. 64111
Galbreath, Ashford M., Professional Bldg. 64106
Ganley, William C., Argyle Bldg. 64106
Gard, Raymond F., 10901 Winner Rd., Independence 64052
Garrison, Roy F., 6400 Prospect 64132
Gaskins, John H., 4320 Wornall Rd. 64111
Geha, Braham J., 7546 Troost Ave. 64131
Gempel, Paul A., 315 Nichols Rd. 64112
Gentry, Enoch N., Jr., Telephone Bldg. 64106
Gibson, David M., St. Luke's Hosp. 64111
Gilkey, Harry M., Professional Bldg. 64106
Ginardi, Donald E., 4643 Wyandotte St. 64112
Ginsberg, Norman A., 751 E. 63rd St. 64110
Gist, William W., 330 W. 47th St. 64112
Glasscock, Ernest L., 411 Nichols Rd. 64112
Goldman, Stanley L., 7546 Troost Ave. 64131
Goldsich, Edward, 209 W. 47th St. 64112
Goldstein, Marvin F., 751 E. 63rd St. 64110
Goodman, Leroy, 751 E. 63rd St. 64110
Goodson, William H., Jr., 1103 Grand Ave. 64106
Goolsbee, Robert L., 6438 Sagamore St., Shawnee Mission, Kan. 66208
Gordon, Morris P., 701 E. 63rd St. 64110
Gorrell, Ned B., 14101 S. 71 Highway, Grandview 64030
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Grabske, Charles F., 10901 Winner Rd., Independence 64052
Grabske, Charles F., Jr., 10901 Winner Rd., Independence 64052
Graham, James W., 1815 E. 63rd St. 64130
Graham, Wallace H., 1815 E. 63rd St. 64130
Grauerholz, James W., 4203 Mercier St. 64111
Green, J. Richard, 10901 Winner Rd., Independence 64052
Green, Stanley L., 10901 Winner Rd., Independence 64052
Greene, W. Wallace, 4620 Nichols Parkway 64112
Gregory, Ralph W., 4620 Nichols Parkway 64112
Griffith, John A., Jr., 4320 Wornall Rd. 64111
Growdon, John A., Professional Bldg. 64106
Guastello, Mario J., 4536 Jefferson 64111
Guffey, Don C., Professional Bldg. 64106
Gullett, Charles C., 1735 Baltimore Blvd. 64108
Gundle, Sigmund, 751 E. 63rd St. 64110
Gunn, Richard W., Professional Bldg. 64106
Haggan, Margaret E., 7809 E. 55th St. N. 64119
Haight, John M., 3401 E. 12th 64127
Haith, Edward E., 751 E. 63rd St. 64110
Haith, Walter F., 2701 E. 31st St. 64128
Hall, Ralph R., St. Luke's Hosp. 64111
Hall, Thomas B., Professional Bldg. 64106
Halperin, Phillip H., 751 E. 63rd St. 64110
Hamel, Herbert A., 6306 Morningside Dr. 64113
Hamill, Robert W., 4320 Wornall Rd. 64111
Hanes, Lee D., 446 W. 69th St. 64113
Hanes, Robert L., 7721 State Line 64114
Hannas, Ralston R., Jr., Volker Blvd. at Brookside 64112
Hardacre, Ruth A., 3300 Charlotte St. 64109
Hardy, Henry M., 6606 Overhill Rd., Shawnee Mission, Kan. 66208
Hardy, John W., Professional Bldg. 64106
Harless, Morris S., 4320 Wornall Rd. 64111
Harlow, Lloyd M., 2462 Brooklyn St. 64127
Harned, Bert W., 2826 Main 64108
Harris, Boyd L., 8982 Kobe Pl., San Diego, Calif.
Hart, Lawrence W., 4643 Wyandotte 64112
Hartwig, Frederick H., 6400 Prospect 64132
Hartwig, Raymond W., 3110 Tomahawk, Shawnee Mission, Kan. 66208
Hash, Emalyn H., 807 W. 69th Terr. 64113
Hashinger, Edward H., 7884 Lookout Dr., La Jolla, Calif. 92037
Hausheer, Herman J., 1612 W. Truman Rd., Independence 64050
Haynes, Solon E., 2727 Main St. 64108
Hazen, Robert M., 6400 Prospect 64132
Heilman, Edward J., 39th & Rainbow Blvd., Kansas City, Kan. 66103
Heller, B. Marcus, 409 E. 63rd St. 64110
Hellerstein, Stanley, 1710 Independence Ave. 64106
Helman, Richard G., 7721 State Line 64114
Henry, Clarke L., 4320 Wornall Rd. 64111
Henry, Schubert D., 1115 Grand Ave., 64106
Herrman, George V., 4320 Wornall Rd. 64111
Hibbard, Blaine Z., 4320 Wornall Rd. 64111
Hickerson, William H., 604 W. Maple, Independence 64050
Higgins, Robert S., 1001 W. 55th St. 64112
Hill, Jack H., Trinity Lutheran Hosp. 64108
Hink, Frederick W., 10229 Independence Rd., Independence 64054
Hirsch, Joe E., 4643 Wyandotte St. 64112
Hoadley, William D., 6400 Prospect Ave. 64132
Hodgson, Frank H., 4301 Main St. 64111
Hoeper, Samuel D., 12921 Grandview Rd., Grandview 64030
Hoffman, Jacob S., 751 E. 63rd St. 64110
Hoffmann, R. Lee, Professional Bldg. 64106
Hogan, Daniel F., Student Health Center, Kansas State Univ., Manhattan, Kan. 66504
Hogue, Frank S., 4320 Wornall Rd. 64111
Hollweg, Kenneth C., 4320 Wornall Rd. 64111

Holt, Waldo S., 4620 Nichols Parkway 64112
Holton, Edward B., 10901 Winner Rd., Independence 64052
Hook, Waller C., 6400 Prospect Ave. 64132
Hornstra, Robijn K., 2200 McCoy St. 64108
Hughes, Gerald E., 6400 Prospect Ave. 64132
Hungate, Carroll P., Professional Bldg. 64106
Hunt, Claude J., 6400 Prospect Ave. 64132
Hunt, Thomas R., 6400 Prospect Ave. 64132
Hunter, Martin P., 4706 Broadway 64112
Hunzicker, Warren J., 3520 Broadway 64141
Hurwitt, Frank, Park East Hotel 64106
Hustead, Robert F., 9510 Belinder Rd., Leawood, Kan. 66206
Hyde, Lawrence L., 4620 Nichols Parkway 64112
Ide, Carl H., General Hosp. 64108
Ingham, Walton C., 4320 Wornall Rd. 64111
Irwig, Fred, Professional Bldg. 64106
Jackson, Haywood R., 3317 E. 43rd St. 64130
Jackson, William R., 1102 Grand Ave. 64106
Jacob, Walter P., 701 E. 63rd St. 64110
Jacobs, David S., 4949 Rockhill Rd. 64110
Jacobs, Morton, 6314 Brookside Plaza 64113
Jacobs, Walter H., 751 E. 63rd St. 64110
Jaime, Nicholas, 1820 W. 38th St. 64111
James, Otis E., Jr., 6306 Morningside Dr. 64113
Jansen, Robert, 101 E. 63rd St. 64113
Jarvis, James A., 600 W. 57th St. 64113
Jenab, Morteza, 751 E. 63rd St. 64110
Jennett, J. Harvey, Professional Bldg. 64106
Johnson, C. Laurence, Professional Bldg. 64106
Johnson, James S., 2202 E. 18th St. 64127
Johnson, Joseph E., 5801 E. 113th St. 64134
Johnson, Morris B., 1102 130th St., Grandview 64030
Johnson, Thomas M., 4320 Wornall Rd. 64111
Johnson, William A., 2200 Prospect Ave. 64127
Johnstone, Paul N., Bryant Bldg. 64106
Jonas, Harry S., Jr., 2116 S. Sterling Ave., Independence 64052
Jones, George H., 1435 E. 78th St. 64131
Jones, Marion E., 2462 Brooklyn St. 64127
Jones, T. Reid, 411 Nichols Rd. 64112
Justus, John B., Plaza Parkway Bldg. 64112
Kahn, Marvin, 751 E. 63rd St. 64110
Kanarek, Joseph, 751 E. 63rd St. 64110
Kantor, Julius M., 701 E. 63rd St. 64110
Kantor, Samuel, 751 E. 63rd St. 64110
Kartus, Irving, 6155 Oak St. 64113
Katz, Milton, 4620 Nichols Parkway 64112
Kaufmann, Herbert H., 701 E. 63rd St. 64110
Kaul, Philip G., 4320 Wornall Rd. 64111
Keairnes, Harold W., 3800 S. Woodland, Independence 64052
Kealhofer, George C., 6627 Prospect Ave. 64132
Keeler, James E., 4620 Nichols Parkway 64112
Kelly, Eugene H., The Baptist Home, Ironton 63650
Kendall, Charles A., 10901 Winner Rd., Independence 64052
Kendall, Forrest H., Andrews AFB, Washington, D. C.
Kennard, George K., 4320 Wornall Rd. 64111
Kent, Bela K., 701 E. 63rd St. 64110
Kent, Clifford F., Professional Bldg. 64106
Kernodle, Jefferson D., Argyle Bldg. 64106
Ketcham, William M., 4706 Broadway 64112
Ketterman, Grace H., 9231 Belinder, Shawnee Mission, Kan. 66206
Ketterman, Herbert L., 5801 E. 113th St. 64134
Kettner, Edward G., Professional Bldg. 64106
Kienberger, Paul A., 10605 E. 35th Terr., Independence 64052
Kiene, Richard H., 5835 High Dr., Shawnee Mission, Kan. 66208
Kimball, Merritt H., 610 E. 36th St. 64109
King, J. Tenbrook, 4320 Wornall Rd. 64111
King, Walter R., Professional Bldg. 64106
Kingsbury, Helen, 6415 Sagamore, Shawnee Mission, Kan. 66208
Kiser, David M., 920 W. 47th St. 64112
Kitchen, William M., 425 E. 63rd St. 64110
Klein, Edward H., Plaza Medical Bldg. 64112
Klepinger, Dayton P., 826 Warwick Ct., Neosho 64850
Knight, John S., 305 W. 43rd St. 64111
Knight, Lyle B., 615 W. 3rd St., Lee's Summit 64063
Knoch, H. Kermit, Plaza Parkway Bldg. 64112
Koehler, Charles A., 5920 Nall Ave., Shawnee Mission, Kan. 66208
Korth, William M., Professional Bldg. 64106
Kovac, Albert P., Argyle Bldg. 64106
Kraft, Jacob, 701 E. 63rd St. 64110
Kranson, Seymour J., 11200 Winner Rd., Independence 64052
Kuhn, William F., II, 6247 Brookside Plaza 64113
Kyger, Fred B., 637 W. 67th Terr. 64113
Kyger, John E., 3612 Blue Ridge, Independence 64052
Kyner, Thomas A., Wirthman Bldg. 64109
Laffoon, France L., 869 Alta Vista Dr. N., Vista, Calif. 92083
Lally, James J., 906 Grand Ave. 64106
Lamar, Robert F., Professional Bldg. 64106
Lambert, L. Marian, 10928 Hillcrest Rd. 64134
Lambie, Rodger W., 701 E. 63rd St. 64110
Landis, George K., Professional Bldg. 64106
Lapi, Angelo, 2012 Stratford Rd., Shawnee Mission, Kan. 66208
Lapp, Harry C., 751 E. 63rd St. 64110
Latham, Raymond W., 4620 Nichols Parkway 64112
Lauer, Daniel J., 4320 Wornall Rd. 64111
Laurenzana, Frank P., 428 S. White Ave. 64123
Layton, Ira C., 6400 Prospect Ave. 64132
Lee, George C., P. O. Box 1065 64141
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Lehner, Richard L., Professional Bldg. 64106
Leifer, William W., 701 E. 63rd St., 64110
Leitch, Cecil G., 808 S. 15th St., Blue Springs 64015
Leitch, David A., 24th & Cherry Sts. 64108
Leitz, Frank B., Professional Bldg. 64106
Lentz, Clark H., B.M.A. Tower 64141
Leo, William A., 6400 Prospect Ave. 64132
Levey, Harry B., 701 E. 63rd St. 64110
Lewis, Revis C., 1103 Grand Ave. 64106
Lichtor, Alexander, 751 E. 63rd St. 64110
Lichtor, Joseph M., 751 E. 63rd St. 64110
Lieberman, B. Albert, Jr., 4620 Nichols Parkway 64112
Lilly, Terry E., Sr., 306 E. 12th St. 64106
Lilly, Terry E., Jr., 306 E. 12th St. 64106
Lindquist, Carl N., 106 W. 14th St. 64105
Link, Vance E., 1201 W. 36th St., Independence 64050
Linville, Howard E., 4620 Nichols Parkway 64112
Lloyd, Ivan E., 1816 Rankin, Independence 64050
Lohrentz, Lois H., 2800 W. 50th Terr., Shawnee Mission, Kan. 66208
Long, R. Stacy, 6400 Prospect Ave. 64132
Lowell, Paul 4742 Liberty St. 64112
Lowrey, Ford J., 106 W. 96th St. 64114
Lundgren, Fred H., Jr., 4706 Broadway 64111
Lyddon, Harold F., Jr., 75th & Troost 64131
Lytton, George J., 411 Nichols Rd. 64112
McCalla, John P., Blue Ridge Professional Bldg. 46133
McCanse, Andrew, 4320 Wornall Rd. 64111
McCarthy, William F., 140 Lake Topawingo, Blue Springs 64015
McClanahan, Robert C., Professional Bldg. 64106
McConchie, James E., 10901 Winner Rd., Independence 64052
McCoy, Frederick J., 4177 Broadway 64111
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McCunniff, William B., Argyle Bldg. 64106
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McDonnell, John F., 4320 Wornall Rd. 64111
McEachen, William H., 4320 Wornall Rd. 64111
McFarland, H. Richard, 4320 Wornall Rd. 64111
McFarland, M. Donald, 4320 Wornall Rd. 64111
McGannon, Paul T., 920 W. 47th St. 64112
McGuire, Thomas H., 429 W. 58th St. 64113
McIntyre, John D., 4516 Cambridge Ct. 64110
McKee, Joseph W., 4320 Wornall Rd. 64111
McKee, Wallace P., 4320 Wornall Rd. 64111
McKnelly, William V., Jr., 4801 E. Linwood Blvd. 64128
McLeod, John, 116 W. 47th St. 64112
McMillan, Thomas E., 6400 Prospect Ave. 64132
McNutt, Theodore L., 5801 E. 113th St. 64134
McPhee, William R., 2800 Hospital Dr. 64116
McVay, James R., V.F.W. Bldg. 64111
McVay, James R., Jr., V.F.W. Bldg. 64111
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Mangels, Kenneth A., 1212 W. Truman Rd., Independence 64050
Mantell, Harriet B., 634 W. 67th Terr. 64113
Marks, Mark M., 701 E. 63rd St. 64110
Marsh, Alice, Pleasant Hill 64080
Marshall, Cameron F., Plaza Theatre Bldg. 64112
Masucci, Joseph M., Argyle Bldg. 64106
Mathewson, Hugh S., 4620 Nichols Parkway 64112
May, James W., 425 E. 63rd St. 64110
Mayer, John H., Jr., Plaza Parkway Bldg. 64112
Medlicott, William J., 4320 Wornall Rd. 64111
Melgaard, S. Ross, 1012 W. 61st Terr. 64113
Meriwether, Don R., 4620 Nichols Parkway 64112
Meyer, Paul W., 4312 Nichols Parkway 64112
Meyers, Harold L., 1901 Brookwood Rd., Shawnee Mission, Kan. 66208
Miles, George O., 4320 Wornall Rd. 64111
Miller, Clint L., 615 W. 3rd St., Lee's Summit 64063
Miller, Gerald L., 4706 Broadway 64112
Miller, Max I., 4001 W. 66th St., Shawnee Mission, Kan. 66208
Miller, Wilson H., 4620 Nichols Parkway 64112
Mitchell, Andrew D., 4320 Wornall Rd. 64111
Mitchell, Robert H., Bryant Bldg. 64106
Mitra, Nirmal K., 5801 E. 113th St. 64134
Mixson, William C., 4320 Wornall Rd. 64111
Moe, William W., 2625 W. Paseo Blvd. 64108
Montello, Samuel A., 4620 Nichols Parkway 64112
Montgomery, James G., 310 W. 49th St. 64112
Mooney, Justin L., Bryant Bldg. 64106
Mooney, Marcel L., 751 E. 63rd St. 64110
Moore, Robert A., Box 679, 64141

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Morrison, Donald H., 2510 Linwood Blvd. 64128
Moss, Paul, 4706 Broadway 64112
Mosser, Robert S., 10901 Winner Rd., Independence 64052
Mount, Allan, 1509 W. Truman Rd. Independence 64050
Mueller, Martin J., 6400 Prospect Ave. 64132
Mullen, Leo M., 4443 Paseo 64110
Multhauf, Cyril J., 5629 W. 50th St., Mission, Kan. 66202
Mundy, William L., 4635 Wyandotte 64112
Murphy, James J., 7546 Troost Ave. 64110
Murphy, Robert J., 4320 Wornall Rd. 64111
Myers, John S., Shukert Bldg. 64106
Myers, Robert M., Rialto Bldg. 64106
Myers, Wilson A., 425 Huntington Rd. 64113
Naime, Mansour J., 425 E. 63rd St. 64110
Needels, Orval T., 7400 Wornall Rd. 64114
Nelson, Bentley A., 305 W. 43rd St. 64111
Nesselrode, John H., 10901 Winner Rd., Independence 64052
Newman, Robert L., 7721 State Line 64114
Nickson, Charles E., Jr., 10901 Winner Rd., Independence 64052
Nicolay, Kenneth S., 4320 Wornall Rd. 64111
Nigro, Dominic M., 207 E. 51st Terr. 64112
Nigro, E. Robert, 415 W. 55th St. 64113
Nigro, Joseph A., 1055 W. 55th St. 64113
Noback, Richardson K., 24th & Cherry Sts. 64108
Noltensmeyer, Milton N., 3305 W. 50th Terr., Shawnee Mission, Kan. 66208
Nunn, Pat M., 1401 Southwest Blvd., Kansas City, Kan. 66108
Ogilvie, John H., Box 157, Route 1, Gravois Mills 65037
O'Hearne, John J., 4643 Wyandotte St. 64112
O'Malley, James F., 4706 Broadway 64112
O'Neil, James H., 425 E. 63rd St. 64110
Ost, Mark D., 16 W. 115th St. 64115
Overesch, Harry B., 6400 Prospect Ave. 64132
Owens, Graham J., 152 W. Mezzanine, Union Station 64108
Owens, Hugh H., 152 W. Mezzanine, Union Station 64108
Owens, Richard L., 9228 E. Highway 50 64133
Owens, Robert H., 4706 Broadway 64112
Owre, Alfred, Jr., 2200 McCoy St. 64108
Ozar, Milton B., 701 E. 63rd St. 64110
Padfield, Earl G., Jr., Plaza Broadway Bldg. 64112
Pakula, Sidney F., 751 E. 63rd St. 64110
Pallett, Harold A., 4620 Nichols Parkway 64112
Parelman, Allen G., 701 E. 63rd St. 64110
Parker, Elmer L., 3027 Campbell St. 64109
Parker, Hubert M., Argyle Bldg. 64106
Parsons, Eugene O., 315 Nichols Rd. 64112
Passman, Harold, 701 E. 63rd St. 64110
Pearson, Paul E., Rialto Bldg. 64106
Peete, Don C., Professional Bldg. 64106
Penecost, Richard L., 2200 McCoy 64108
Penner, Stanley, 751 E. 63rd St. 64110
Perll, Maurice F., 830 W. 61st Terr. 64113
Perll, Rita D., 830 W. 61st Terr. 64113
Perry, Ralph, 6400 Prospect Ave. 64132
Petersen, A. Gene, 7721 State Line 64114
Petersen, Gerald D., 7721 State Line 64114
Peterson, Carl M., 2701 E. 31st St. 64128
Peterson, George L., 4806 W. 68th St., Shawnee Mission, Kan. 66208
Peterson, Milton C., 2316 E. Meyer Blvd. 64132
Peterson, Robert F., 4949 Rockhill Rd. 64110
Peterson, Walter R., 2701 E. 31st St. 64128
Petry, Ezra L., 701 E. 63rd St. 64110
Pfuetze, Edwin L., Plaza Parkway Bldg. 64112
Pickard, Nicholas S., 6210 High Dr., Shawnee Mission, Kan. 66208
Pickens, Edgar E., 4826 Roanoke Parkway 64112
Pierron, John B., 6516 Linden Rd. 64113
Pinsker, Oscar T., 751 E. 63rd St. 64110
Piper, Donald K., Professional Bldg. 64106
Pipkin, Garrett F., Argyle Bldg. 64106
Polk, George M., 12112 E. 52nd Terr. 64133
Pollock, Leo H., 751 E. 63rd St. 64110
Pope, Charles H., Jr., 1509 W. Truman, Independence 64050
Porter, Louis, 751 E. 63rd St. 64110
Poser, Charles M., 616 W. Meyer Blvd. 64113
Potter, Lee G., Professional Bldg. 64106
Potts, Donald A., 10901 Winner Rd., Independence 64052
Powell, Nelson E., 4400 Nichols Parkway 64111
Powers, John M., 3304 Linwood Blvd. 64128
Prentiss, Harry S., 6832 Sni-A-Bar Rd. 64129
Preston, Albert, Jr., 4320 Wornall Rd. 64111
Printz, Joseph H., 701 E. 63rd St. 64110
Printz, Otto J., 701 E. 63rd St. 64110
Pucci, Gregory L., 411 Nichols Rd. 64112
Pugh, Richard G., 1612 W. Truman Rd., Independence 64050
Quer, Erich A., 6400 Prospect Ave. 64132
Quistgard, Paul C., 7300 Manchester Ave. 64133
Rader, Ada B., 13414 Locust St. 64145
Raich, Robert A., 4320 Wornall Rd. 64111
Ramey, Ehret O., 4635 Wyandotte 64112
Ramos, John F., Jr., 2849 Indiana Ave. 64128
Rannie, Paul R., 709 S. Fuller St., Independence 64052
Rector, Joe L., Jr., St. Luke's Hosp. 64111
Reinhardt, George R., 6400 Prospect Ave. 64132
Reister, Philip D., 1815 E. 63rd St. 64130
Reitz, Carl H., 7329 Broadway 64114
Remley, George C., 4134 S. Benton 64130
Reynolds, Clarence C., 4615 E. 43rd Terr. 64130
Rhoades, Arthur B., Professional Bldg. 64106
Richardson, Marion W., 2526 Prospect Ave. 64127
Richert, Robert C., 504 W. 96th St. 64114
Riley, Joseph P., Jr., General Hosp. 64108
Riller, Lowell E., Professional Bldg. 64106
Roberts, Grosvenor G., 701 E. 63rd St. 64110
Roberts, Harold M., Professional Bldg. 64106
Roberts, Sam E., Professional Bldg. 64106
Robinson, Arthur W., 4320 Wornall Rd. 64111
Robinson, E. Kip, Professional Bldg. 64106
Robinson, G. Wilse, Jr., 2625 Paseo Blvd. 64108
Robinson, William J., 9931 Lee Circle, Leawood, Kan. 66206
Robison, James T., Jr., 4620 Nichols Parkway 64112
Rodgers, George H., 10041 El Monte La., Overland Park, Kan. 66207
Rodgers, Samuel U., 2701 E. 31st St. 64128
Rogers, Robert L., 751 E. 63rd St. 64110
Rose, Charles W., 334 S. Van Brunt 64124
Rubin, Sidney, 1287 W. 72nd St. 64114
Rubnitz, Leon H., 751 E. 63rd St. 64110
Rufe, John R., Bryant Bldg. 64106
Russell, James L., 4320 Wornall Rd. 64111
Russell, Robert K., 63rd & Evanston, Raytown 64133
Saferstein, A. Lester, 6859 Cherry St. 64131
Saladino, Anthony, Argyle Bldg. 64106
Samuelson, Edward A., 4620 Nichols Parkway 64112
Sanders, Donald C., 2625 W. Paseo Blvd. 64108
Sanders, Harmon U., Jr., 2246 Rhode Island, Lawrence, Kan. 66044
Sanders, William F., 411 Nichols Rd. 64112
Santoro, Carlos G., 3309 W. 63rd St., Shawnee Mission, Kan. 66208
Saper, Philip, 3 E. 3rd St., Lee's Summit 64063
Sasano, Joseph R., Jr., 1710 Independence Ave. 64106
Sauer, Gordon C., 6400 Prospect Ave. 64132
Saunders, Everett L., 121 W. Lexington, Independence 64050
Scarpellino, Louis A., 44th & Nichols Parkway 64111
Schaerrer, William C., 4320 Wornall Rd. 64111
Schiffmacher, Jack E., Professional Bldg. 64106
Schillie, Gene A., 6400 Prospect Ave. 64132
Schorer, Edwin H., 221 W. 48th St. 64112
Schottman, Gerhard W., Jr., 44th & Nichols Parkway 64111
Schutz, Carl B., 320 W. 47th St. 64112
Schutz, Richard B., Plaza Time Bldg. 64112
Seely, Clark W., 4320 Wornall Rd. 64111
Sewell, Minor F., 1722 W. 39th St. 64111
Shackleford, Elbert C., 9406 E. 63rd St. 64110
Shapiro, Lazare M., 701 E. 63rd St. 64110
Sheahon, John A., 9406 E. 63rd St. 64133
Shecter, Nathan, 701 E. 63rd St. 64110
Shelden, Russell D., 2316 E. Meyer Blvd. 64110
Sheldon, John, 6305 Brookside Plaza 64113
Shifrin, Alexander, 6824 Holmes St. 64131
Shireman, Kenneth L., 4606 St. John Ave. 64123
Shires, Edward B., 10312 Cherokee La., Leawood, Kan. 66206
Shockley, Clarence J., 5927 McGee 64113
Shofstall, Charles K., 310 W. 47th St. 64112
Shopfner, Charles E., 1710 Independence Ave. 64106
Shuey, Herbert H., 3903 Brooklyn Ave. 64130
Shypper, Moses J., 751 E. 63rd St. 64110
Siegel, Irving, 215 Volker Rd. 64112
Silverstein, Martin E., 5355 Mission Woods Rd., Shawnee Mission, Kan. 66208
Simon, Sanford, 8129 Rosewood, Shawnee Mission, Kan. 66208
Sinclair, Alexander B., 920 W. 47th St. 64112
Singleton, John M., III, 411 Nichols Rd. 64130
Skillman, Robert K., 4320 Wornall Rd. 64111
Skinner, John T., Bryant Bldg. 64106
Slentz, Edwin L., 4320 Wornall Rd. 64111
Slentz, William A., 4320 Wornall Rd. 64111
Slickman, R. A., 7721 State Line 64114
Smith, Arthur B., 6400 Prospect Ave. 64132
Smith, Dale C., 4320 Wornall Rd. 64111
Smith, Edwin I., 1710 Independence Ave. 64106
Smith, H. Eugene, 411 Nichols Rd. 64112
Smith, Ira T., 6400 Prospect Ave. 64132
Smith, Katherine W., 801 W. 58th Terr. 64113
Smith, O. D., 6300 Woodson St., Mission, Kan. 66202
Smith, Wallace B., 10901 Winner Rd., Independence 64052
Smull, Ned W., 2318 W. 70th Terr., Shawnee Mission, Kan. 66208
Sneid, Philip, 701 E. 63rd St. 64110
Snider, Samuel H., 722 Ward Parkway 64121
Snider, Wilbur R., 10901 Winner Rd., Independence 64052
Spafford, Allen L., 315 Nichols Rd. 64112
Spalding, Wilber B., Jr., 1102 Grand Ave. 64106
Spencer, Donald M., University of Kansas Medical Center, Kansas City, Kan. 66103
Spurny, Otto M., 425 E. 63rd St. 64110
Stacey, Wallace R., 2116 S. Sterling Ave., Independence 64052
Staggs, William A., Argyle Bldg. 64106
Staley, Harry R., Bryant Bldg. 64106
Starke, Helen (Sister Paula Therese), Queen of the World Hosp. 64127
Statland, Harry, 751 E. 63rd St. 64110
Statland, Morris, 751 E. 63rd St. 64110
Steffen, Lawrence F., Professional Bldg. 64106
Stegman, Elmer G., 6137 Blue Ridge Blvd., Raytown 64133
Stein, Joseph W., 1103 Grand Ave. 64106
Stelle, Charles W., Bendix Corp., Box 1159 64141
Stelmach, Walter J., 7949 State Line 64114
Stockton, Raymond W., 4320 Wornall Rd. 64111

Stockwell, A. Lloyd, Professional Bldg. 64106
Stone, Raymond F., 7949 State Line 64114
Stotts, Charles S., 8221 Nall Ave., Prairie Village, Kan. 66208
Stratemeier, Edward H., 31st & Wyandotte Sts. 64108
Strauss, Carl F., 751 E. 63rd St. 64110
Stribling, Thomas L., 2116 S. Sterling Ave., Independence 64052
Summers, Caldwell B., Plaza Theatre Bldg. 64112
Sutton, Richard L., Jr., 411 Nichols Rd. 64112
Swisher, Robert C., 425 E. 63rd St. 64110
Switzer, Clyde, 8100 W. 54th Terr., Merriam, Kan. 66202
Szabados, Ernest D., 1612 W. Truman Rd., Independence 64050
Tarson, Solomon S., 5511 W. 85th St., Overland Park, Kan. 66207
Tasker, Charles B., 31st & Wyandotte St. 64108
Teall, Raymond E., 650 W. 56th St. 64113
Teare, Max E., 11201 Walnut St. 64114
Terrill, Robert S., 4643 Wyandotte 64112
Tesson, James A., Rialto Bldg. 64106
Theel, Otto W., Jr., 4301 Main St. 64111
Thiele, George H., 411 Nichols Rd. 64112
Thomas, Christopher Y., 4320 Wornall Rd. 64111
Thompson, Charles L., 4320 Wornall Rd. 64111
Threlkeld, William L., Jr., 89 Dela Revision, Brussels, Belgium
Tice, Wayne K., 1509 W. Truman Rd., Independence 64050
Totten, Frederick E., Bendix Corp., P. O. Box 1159, 64141
Trippe, Harrison C., 8511 Lee Blvd., Shawnee Mission, Kan. 66208
Trowbridge, Barnard C., 415 E. 63rd St. 64110
Trowbridge, Ellsworth H., Jr., 411 Nichols Rd. 64112
Turner, Percy C., 2846 Myrtle 64128
Tutera, Dominic F., Plaza Medical Bldg. 64112
Tuthill, Herbert, 1037 W. 71st Terr. 64114
Twin, Edward J., 701 E. 63rd St. 64110
Twyman, Richard A., 4320 Wornall Rd. 64111
Underwood, Dick H., Bryant Bldg. 64106
Underwood, Harry A., 5100 E. 24th St. 64127
Underwood, Johnson, Jr., Professional Bldg. 64106
Underwood, Ross H., Bryant Bldg. 64106
Unger, Harold, 701 E. 63rd St. 64110
Upsher, Albert E., Argyle Bldg. 64106
Van Biber, James T., 1612 W. Truman Rd., Independence 64050
Van Buskirk, Terrance E., 5246 St. John Ave. 64123
Van Buskirk, William C., 4620 Nichols Parkway 64112
Vaughn, James W., Neurological Hosp. 64108
Vermeire, David A., 10 Richard Rd. 64116
Vilmer, Charles, Professional Bldg. 64106
Vincent, Jack C., 701 E. 63rd St. 64110
Virden, Herbert H., 7546 Troost Ave. 64131
Voth, Harold W., 4320 Wornall Rd. 64111
Wade, Frederick E., Professional Bldg. 64106
Wagner, Paul J., 2826 Main St. 64108
Wakefield, Franklin H., 1102 Grand Ave. 64106
Walker, James C., 2727 Main St. 64108
Walker, John W., 6400 Prospect Ave. 64132
Walker, Orville C., Jr., 1210 S. Ash St., Independence 64052
Wall, Harry C., 751 E. 63rd St. 64110
Wall, Leonard A., 4320 Wornall Rd. 64111
Ward, Robert L., 4126 St. John St. 64123
Watson, Ethel, First National Bank Bldg., Independence 64050
Waxman, David, 4840 Prospect Ave. 64130
Waxman, Jane Z., 4840 Prospect Ave. 64130
Weakley, David R., 411 Nichols Rd. 64112
Webb, Harry E., 330 W. 47th St. 64112
Weiford, Edward C., 4320 Wornall Rd. 64111
Welker, Joseph E., 6441 Summit St. 64113
Wells, John H., 3325 Prospect Ave. 64128
Weltscheff, Christo A., 1800 Blue Ridge Ext. 64146
Wheeler, Charles B., 820 W. 57th St. 64113
Wheeler, John H., 4320 Wornall Rd. 64111
White, Charles H., 6518 Overhill Rd., Prairie Village, Kan. 66208
White, George A., 3416 Paseo Blvd. 64109
White, James S., 2849 Indiana 64128
White, Stoughton F., 4320 Wornall Rd. 64111
White, William E., Argyle Bldg. 64106
Whiteman, John R., 6314 Brookside Plaza 64113
Whitman, Doyle C., Sharp Bldg. 64106
Whitmore, J. Stewart, 1039 W. 58th St. 64113
Whittaker, Charles K., 4320 Wornall Rd. 64111
Wien, Irving A., 1103 Grand Ave. 64106
Wilhelm, Warren F., 6400 Prospect Ave. 64132
Wilkinson, Charles B., 4604 Benton Blvd. 64130
Wilkinson, Everett A., 6400 Prospect Ave. 64132
Williams, Frank R., 4320 Wornall Rd. 64111
Williams, George P., 6105 Fairland Dr. 64134
Williams, Joseph C., Jr., 6400 Prospect Ave. 64132
Williams, Luke E., 2201 E. 27th St. 64127
Williams, Robert A., 5707 Wabash 64130
Williams, Roland D., 305 W. 43rd St. 64111
Williams, Starks J., 5600 Agnes Ave. 64130
Williams, Vincent T., Argyle Bldg. 64106
Williamson, George L., Professional Bldg. 64106
Willits, Lyle G., Professional Bldg. 64106
Willoughby, James W., 32 S. Main, Liberty 64068
Willoughby, Jean B., 6400 Prospect Ave. 64132
Wilson, Clifford C., Plaza Time Bldg. 64112
Wilson, Hester J., Plaza Time Bldg. 64112
Winer, Herbert J., 751 E. 63rd St. 64110
Winkelman, Esther B., 7449 Broadway 64114
Winston, Bernard H., 751 E. 63rd St. 64110
Wise, George W., 4620 Nichols Parkway 64112
Withers, Orval R., Plaza Parkway Bldg. 64112
Wolf, Jack W., 425 E. 63rd St. 64110
Wolff, Dolores J., Richards-Gebaur AFB Grandview 64031
Woods, Harold V., 11404 Winner Rd., Independence 64052
Woods, S. Dwight, 4320 Wornall Rd. 64111
Woods, Walton C., Medical Dept., TWA Midcontinent Airport 64108
Woodward, William W., 10901 Winner Rd., Independence 64052
Workman, Charles E., Professional Bldg. 64106
Wortmann, Robert F., 6400 Prospect Ave. 64132
Wright, R. Paul, Professional Bldg. 64106
Wu, William Q., 63rd & Holmes St. 64110
Wurster, W. Joel, 305 W. 43rd St. 64111
Yohe, Ruth M., 1710 Independence Ave. 64106
Youll, Donald V., 409 E. 63rd St. 64110
Youmans, Ronald A., 415 E. 63rd St. 64110
Young, James E., 4320 Wornall Rd. 64111
Young, Jesse W., 1401 Southwest Blvd., Kansas City, Kan. 66103
Young, Paul R., 7424 Gregory Circle 64133
Youngblood, James P., 4620 Nichols Parkway 64112
Zahony, Ivan, 24th & Cherry Sts. 64108
Zellermayer, Jacob, 701 E. 63rd St. 64110

JASPER COUNTY MEDICAL SOCIETY
(Joplin)

Allen, David O., 2525 S. Jackson St. 64803
Barnett, Norman H., 25th & Jackson Sts. 64803
Birsner, Frank H., 1717 River St., Carthage 64836
Burch, John E., Medical Arts Bldg. 64801
Carnes, Victor M., Medical Arts Bldg. 64801
Chase, Ned B., Jr., 3125 Virginia St. 64803
Chesney, George W., 25th & Jackson Sts. 64803
Cohle, Richard R., 301 E. Chestnut, Carthage 64836
Craig, Irwin T., 25th & Jackson Sts. 64803
Crawford, Archie L., Frisco Bldg. 64801
Crispell, Lawrence S., 6th & Pearl Ave. 64801
DeTar, Burleigh E., 410 Jackson St. 64801
DeTar, B. E., Jr., 410 Jackson St. 64801
Douglass, Jesse E., 3560 Broadway, Kansas City 64111
Eliscu, Juliette M., 2002 Jackson St. 64803
Ferguson, Lewis H., Jr., 604 Plaza Dr. 64803
Ferguson, Ralph L., Medical Arts Bldg. 64801
Ferguson, Robert M., 110 N. Webb, Webb City 64870
Fritsch, Andrew J., 2920 Pearl St. 64803
Graves, F. Burton, 114 W. 32nd 64803
Grubb, Paul H., 2509 Jackson St. 64803
Hall, Marvin F., Medical Arts Bldg. 64801
Hamilton, Eugene H., Medical Arts Bldg. 64801
Holtzman, Samuel, Medical Arts Bldg. 64801
Hornback, Edward R., Frisco Bldg. 64801
Hurst, Wilfred W., Medical Arts Bldg. 64801
Isbell, Charles H., Carthage 64836
Jeans, Virgil, Medical Arts Bldg. 64801
Kirschman, Robert E., 2529 Jackson St. 64803
Koehler, John W., Medical Arts Bldg. 64801
Kuhn, John R., Jr., Frisco Bldg. 64801
Laney, Ronald L., 3140 Ocean St., Carlsbad, Calif.
Longenecker, Joe L., 2503 Jackson St. 64803
McIntire, Emery J., 201 W. 3rd St., Carthage 64836
McNew, William T., Carthage 64836
McPike, Lloyd H., Frisco Bldg. 64801
Mack, Mary L. (Address Unknown)
Maddox, John D., 6th & Pearl Sts. 64801
O'Brien, James A., 545 N. 6th St., Muskogee, Okla.
Paddock, Charles S., Medical Arts Bldg. 64801
Papp, Sandor D., Medical Arts Bldg. 64801
Patterson, Donald R., 2509 Jackson St. 64803
Patterson, Grover S., 510 S. Main, Carthage 64836
Pence, F. Wendell, 612 S. Main, Carthage 64836
Poor, Carl W., Route 1, Box 302, Neosho 64850
Post, Winfred L., 617 Joplin St. 64801
Powell, Robert G., 2329 Jackson St. 64803
Royce, James J., Sarcoxie 64862
Schoeberl, Cletus B., Medical Arts Bldg. 64801
Schulte, Gregory A., 2125 Jackson St. 64803
Scorse, Sidney W., 2509 Jackson St. 64803
Shanahan, Mary P., 211½ W. 20th St. 64803
Smith, Roland T., Medical Arts Bldg. 64801
Smith, William R., 211 E. Chestnut St., Carthage 64836
Walker, Paul W., Medical Arts Bldg. 64801
Webster, Roger W., 863 Cherry Way, Hayward, Calif.
Wetzel, Fred S., Jr., 1515 Hazel St., Carthage 64836
Whitten, M. Foster, 616 W. Centennial St., Carthage 64836
Wieman, Harry K., Medical Arts Bldg. 64801
Wilcox, Ruth E., 614 Joplin St. 64801
Wilson, Alice H., 1923 Sergeant St. 64803
Wood, George H., 1515 Hazel St., Carthage 64836
Wooldridge, Bart F., Medical Arts Bldg. 64801
Young, Calvin C., Jr., Medical Arts Bldg. 64801

JEFFERSON COUNTY MEDICAL SOCIETY

Allbee, Roger H., Crystal City 63019
Bolgar, Bertalan, Festus 63028
Commerford, James J., Crystal City 63019
Donnell, Harold E., De Soto 63020
Donnell, Robert H., Crystal City 63019
Donnell, Thomas A., De Soto 63020
Edwards, Waldo B., 135 W. Adams, Kirkwood 63122
Fallet, Charles E., De Soto 63020
Judge, Walter T., Crystal City 63019
Kozal, Francis L., Crystal City 63019
McKinstry, Karl V., De Soto 63020
Mayfield, James L., Crystal City 63019
Reich, Oliver F., Imperial 63052
Rice, Carl E., Hillsboro 63050
Rutledge, John F., Festus 63028
Senn, Emmett J., Herculaneum 63048
Yoskit, Harry, Festus 63028

JOHNSON COUNTY MEDICAL SOCIETY
(Warrensburg 64093)

Cooper, R. Lee, Warrensburg
Damron, Oscar H., Warrensburg
Folkner, A. L., Warrensburg
Frein, Donald E., Leeton 64761
Gonzalez, M. Garza, Warrensburg
Grove, Gulph W., Knobnoster 65336
Harkness, Harry, Warrensburg
Johnson, Charles S., Warrensburg
Jones, Keith D., Warrensburg
Lederer, Charles M., Warrensburg
Maxson, T. Reed, Warrensburg
Rawlins, Kelly, Holden 64040

KNOX COUNTY
(North Central Counties Medical Society)

LACLEDE COUNTY
(Mid-Missouri County Medical Society)

LAFAYETTE-RAY COUNTY MEDICAL SOCIETY

Baker, Donald L., Odessa 64076
Best, Robert, Higginsville 64037
Boydston, Catherine, Odessa 64076
Boydston, W. Wayne, Odessa 64076
Brady, Hugh S., Concordia 64020
Brasher, Ben H., Lexington 64067
Cook, Thomas B., Richmond 64085
Cope, Joseph S., Lexington 64067
Crayton, Billy G., Waverly 64096
Crozier, Franklin A., Richmond 64085
Davault, George K., Richmond 64085
Fulkerson, Wilbur E., Higginsville 64037
Goldberg, Isadore E., Braymer 64624
Huber, K. Herbert, Richmond 64085
Kelling, Douglas G., Waverly 64096
Kelling, Jordan, Waverly 64096
Koppenbrink, Walter E., Jr., Higginsville 64037
LaHue, William C., Lexington 64067
Liston, Odus, Oak Grove 64075
McFadden, Gene A., Waverly 64096
Martin, Wilfred E., Odessa 64076
Riley, Charles T., Richmond 64085
Ward, Joe, Lexington 64067
Williams, John W., Oak Grove 64075

LAWRENCE COUNTY
(Ozarks Medical Society)

LEWIS-CLARK-SCOTLAND COUNTIES MEDICAL SOCIETIES

Davis, Landis Y., Canton 63435
Gilfillan, Earl E., Memphis 63555

LINCOLN-ST. CHARLES COUNTY MEDICAL SOCIETY
(St. Charles 63301)

Barnette, Eugene, 207 N. 5th St.
Berry, Paul T., Troy 63379
Canty, Eugene J., 114 N. Main St.
Clever, Henry W., Jr., 114 N. Main St.
Commerford, John F., 114 N. Main St.
Creech, Joseph C., Troy 63379
Crider, Russell J., 222 S. 2nd St.
Damron, Edward O., Elsberry 63343
Duling, Gerald J., 207 N. 5th St.
DuMontier, R. J., O'Fallon 63366
Fleming, Robert J., 120 Clay St.
Goldkamp, John D., 207 N. 5th St.
Hammes, Romar E., 207 N. 5th St.
Hanlon, Russell C., 114 N. Main St.
Hetlage, Louis P., Troy 63379
Kamada, Tsutomu, 117 Clay St.
Keller, Robert M., Wentzville 63385
Kister, George E., 302 S. Second St.
Linsenmeyer, Charles M., 119 Clay St.
Muenster, Vincent P., 117 Clay St.
Neubeiser, Ben L., 2nd & Clay Sts.
Olin, Robert H., 125 Clay St.
Perna, Vincent P., 100 N. Euclid Ave., St. Louis 63108
Poggemeier, William H., Jr., 302 S. Second St.
Randall, Don Q., 220 S. 6th St.
Ridzon, Thomas J., Weldon Springs 63301
Roter, Alexander M., 2414 W. Clay St.
Rother, Paul H., 2414 W. Clay St.
Schneider, Thomas A., 27 St. Henry Court
Scokel, Paul W., III, 207 N. 5th St.
Smoller, Martin B., 207 N. 5th St.
Thiele, O. K., 140 N. Kingshighway
Towers, Orville W., 114 N. Main St.
Westerfeld, Roy A., 115 Clay St.
Wipfler, Earl J., Jr., 143 Cardinal La.
Yaeger, Gerald A., 1916 Sibley St.

LINN COUNTY
(Grand River Medical Society)

LIVINGSTON COUNTY
(Grand River Medical Society)

McDONALD COUNTY
(Ozarks Medical Society)

MACON COUNTY
(Chariton-Macon-Monroe-Randolph County Medical Society)

MADISON COUNTY
(Mineral Area County Medical Society)

MARIES COUNTY
(Mid-Missouri County Medical Society)

MARION-RALLS-SHELBY COUNTY MEDICAL SOCIETY
(Hannibal 63401)

Archer, Perry C., Shelbyville 63469
Bach, Lysle M., 1737 Harrison Hill
Birney, William P., 213 S. 5th St.
Burns, Francis R., 711 Grand Ave.
Canella, John M., 707 Broadway
Clisham, John F., B & L Bldg.
Fischer, Thomas J., 2910 St. Mary's St.
Foreman, Phillip B., 711 Grand Ave.
Francka, W. F., 603 County Club Dr.
Glascock, Donald W., Palmyra 63461
Grant, Albert J., 115 N. 5th St.
Greene, Harry L., Holmes Bldg.
Hamlin, Wyeth, 711 Grand Ave.
Hinds, R. David, 2910 St. Mary's Ave.
Landau, Daniel B., 711 Grand Ave.
Lanning, Robert J., 115 N. 5th St.
Latimer, Walter N. A., B & L Bldg.
Lichty, Charles A., Shelbina 63468
Lucke, Eugene M., Court House
Mann, James K., Hannibal Clinic
Murphy, Bernard L., 2000 Crescent Dr.
Plowman, Edward M., B & L Bldg.
Purcell, P. L., Smithville 64089
Rapp, Earl L., 711 Grand Ave.
Roller, Merrill J., 2910 St. Mary's Ave.
Steele, James C., Jr., 711 Grand Ave.
Strong, Richard M., 711 Grand Ave.
Sweets, Henry H., Jr., 1003 Broadway
Walterscheid, John H., 1209 Broadway
Well, Julius W., Palmyra 63461

MERCER COUNTY
(Grand River Medical Society)

MID-MISSOURI COUNTY MEDICAL SOCIETY
(Phelps-Crawford-Dent-Pulaski-Maries-Laclede Counties)

Bass, Billy J., Salem 65560
Baumann, Albert R., Steelville 65565
Butts, James D., Rolla 65401
Carrington, Howard W., Lebanon 65536
Crosby, Alice S., Salem 65560
Drake, Avery A., Rolla 65401
Elders, Frank A., Jr., Cuba 65453
Feind, Earl E., Rolla 65401
Froelich, Rae W., Lebanon 65536
Garrison, T. W., Camdenton 65020
Hammler, Christiana V., St. James 65559
Hart, Martin M., Salem 65560
Holley, Donald B., Camdenton 65020
Hope, James L., Lebanon 65536
Hunt, Lloyd H., Salem 65560
Hurst, Ben B., Lebanon 65536
Lytle, William R., Rolla 65401
Miller, Clyde S., Waynesville 65583
Mitchell, Roy E., Salem 65560
Myers, James M., Rolla 65401
Riffel, Gordon W., Bourbon 65441
Russell, Barbara E., Rolla 65401
Stricker, Emil A., St. James 65559
Summers, Jacob H., Lebanon 65536
Underwood, Millard K., Rolla 65401
Young, Robert B., Rolla 65401

MILLER COUNTY MEDICAL SOCIETY

Buehler, Carl T., Jr., Eldon 65026
Shelton, Edward O., Eldon 65026

MINERAL AREA COUNTY MEDICAL SOCIETY
(St. Francios-Iron-Madison-Washington-Reynolds Counties)

Appleberry, Charles H., Rivermines 63668
Brennan, John A., Farmington 63640
Bugg, Andrew F., 312 E. 3rd St., Lordsberg, N. M.
Bull, Ben M., Ironton 63650
Burcham, Tom R., Jr., Farmington 63640
Carleton, Charles E., Jr., Farmington 63640
Chastain, Charles W., Farmington 63640
Cresswell, George F., Potosi 63664
Crouch, F. Richard, Farmington 63640
Dennis, W. Paul, Flat River 63601
Dettmer, Robert F., Ironton 63650
Farrar, Charles B., 719 N. Middle St., Cape Girardeau 63701
Ford, William, Farmington 63640
Foster, Jack L., Desloge 63601
Frain, Marie M., API, Anchorage, Alaska
Gaskins, Charles W., Ironton 63650
Grossman, Marvin, Fredericktown 63645
Hardy, Stanton L., Desloge 63601
Harland, Robert E., Ironton 63650
Haw, Marvin T., Jr., 1807 Jackson St., Columbia 65201
Hoctor, Emmett F., Farmington 63640
Huckstep, Robert A., Farmington 63640
Hunt, John W., Jr., Farmington 63640
Karraker, Alvan G., Farmington 63640
Marten, Sue, Viburnum 65566
Menne, Marvin C., Ironton 63650
Michealis, Charles E., Fredericktown 63645
Mullen, Jack, Bonne Terre 63628
Oliver, George A., Farmington 63640
Osborn, Retus W., III, Farmington 63640
Patton, William G., 915 W. Fairview, Arcadia, Calif.
Slaughter, Shelby C., Fredericktown 63645
Taylor, Van W., Bonne Terre 63628
Vester, James E., Bismarck 63624
Warren, T. Thomas, Potosi 63664
Watkins, George L., Jr., Farmington 63640

MISSISSIPPI COUNTY
(SEMO County Medical Society)

MONITEAU COUNTY MEDICAL SOCIETY

Fulks, Richard B., California 65018
Gallagher, Lionel M., California 65018
Kibbe, Edgar A., California 65018
Latham, Kenyon S., California 65018

MONROE COUNTY
(Chariton-Macon-Monroe-Randolph County Medical Society)

MONTGOMERY COUNTY MEDICAL SOCIETY

Andersen, Elmer J. T., Montgomery City 63361
Byland, Samuel J., Wellsville 63384
Helm, James O., New Florence 63363

MORGAN COUNTY MEDICAL SOCIETY
(Versailles 65084)

Gunn, Jack, Versailles
Kauffman, Ruth, Versailles
Lyle, Robert R., Versailles
Washburn, J. Loren, Versailles

NEW MADRID COUNTY
(SEMO County Medical Society)

NEWTON COUNTY
(Ozarks Medical Society)

NORTH CENTRAL COUNTIES MEDICAL SOCIETY
(Adair-Schuyler-Knox-Sullivan-Putnam Counties)
(Kirksville 63501)

Buben, Robert W., Kirksville
Cramb, Arthur B., 711 C. E. Orange, Lakewood, Fla.
English, Milton T., Jr., Kirksville
Freeman, Spencer L., Kirksville
Grim, Edward M., Kirksville
Hasselblad, Oliver W., 297 Park Ave. S., New York, N. Y.
Hilton, Paul E., Kirksville
Isom, Waldo B., Knox City 63446
Jones, John B., Kirksville
Stickler, Ralph O., Kirksville
Tarvydas, Francis, Edina 63537
Tendai, Mark M., Kirksville
Wimp, J. J., Kirksville

NORTHWEST MISSOURI MEDICAL SOCIETY
(Nodaway-Holt-Atchison-Gentry-Worth Counties)

Bare, Edward F., Tarkio 64491
Bauman, Henry C., Maryville 64468
Blacklock, David E., King City 64463
Byland, Benjamin F., Maryville 64468
Carlin, Albert L., Stanberry 64489
Carpenter, Wallace, Rock Port 64482
Cossins, Carlos E., State Hosp. No. 2, St. Joseph 64506
Dunshee, Robert E., Maryville 64468
Humphrey, James, Mound City 64470
Imes, Elvin D., Maryville 64468
Jackson, William R., Maryville 64468
Matteson, Frank B., Grant City 64456
Morgan, Troy O., Jr., Albany 64402
Niedermeyer, Edward L., Tarkio 64491
Parsons, Bernie, Albany 64402
Perry, David C., Mound City 64470
Wanamaker, John M., Rock Port 64482
Wempe, G. Raymond, Maryville 64468

OREGON COUNTY
(South Central Counties Medical Society)

OSAGE COUNTY
(Unorganized)

OZARK COUNTY
(South Central Counties Medical Society)

OZARKS MEDICAL SOCIETY
(Barry-Lawrence-Stone-Christian-Taney-Newton-McDonald Counties)

Alsup, Frederick F., Belen, N. M.
Anderson, Paul B., Neosho 64850
Bailey, Alan B., Mt. Vernon 65712
Blankenship, George W., Neosho 64850
Bowman, Melvin C., Neosho 64850
Brasher, Charles A., Mt. Vernon 65712
Brown, Frederick B., Aurora 65605
Burney, Wallace S., Miller 65707
Capetti, Alex P., Crane 65633
Carter, James R., Neosho 64850
Coffman, Esther E. L., 1514 13th N., Lakeworth, Fla.
Cohnberg, Rosellen E., Neosho 64850
Cowan, R. D., Aurora 65605
Dabbs, Wilbur D., Neosho 64850
Donley, Robert R., Monett 65708
Edwards, Francis L., Monett 65708
Evans, Harry T., Branson 65616
Fogerson, Virginia L., Branson 65616
Gardner, Joseph W., Reeds Spring 65737
Gillespie, Roy, Branson 65616
Glass, William J., Jr., Monett 65708
Glover, Kenneth, Mt. Vernon 65712
Graves, Arthur J., Mt. Vernon 65712
Hamilton, William P., Aurora 65605
Hellweg, Charles E., Mt. Vernon 65712
Kelsey, Kenneth L., Aurora 65605
Kenney, Roy E., Neosho 64850
Kerr, Frank T., Monett 65708
Langeluttig, Harry V., Mt. Vernon 65712
Lentz, Harold C., Neosho 64850
McCallum, A. J. C., Aurora 65605
Magness, William C., Branson 65616
Mars, Hartley F., Forsyth 65653
Marty, Loraine A., Pierce City 65723
Morrison, T. A., Aurora 65605
Newman, Mary J. N., Cassville 65625
Olive, George C., Neosho 64850
Price, Charles H., Cassville 65625
Reynolds, James R., Neosho 64850
Rogers, Donald B., 1115 S. 36th St., Omaha, Neb. 68105
Roper, Stanley D., Ozark 65721
Schultz, Loraine E., Branson 65616
Shumate, L. St. Clair, Reeds Spring 65737
Spears, Charles A., Branson 65616
Sweany, Henry C., Mt. Vernon 65712
Taylor, Leo T., Neosho 64850
Threadgill, Jesse M., Forsyth 65653
Whitehead, Frank F., Neosho 64850
Wilson, Daniel R., Mt. Vernon 65712
Wommack, Fred L., Crane 65633
Yates, J. Lewis, Mt. Vernon 65712

PEMISCOT COUNTY MEDICAL SOCIETY

Aquino, Philip J., Caruthersville 63830
Bernard, J. W., Caruthersville 63830
Bryant, William O., Hayti 63851
Cain, Charles F., Caruthersville 63830
Caldwell, Jacob D., Hayti 63851
Chapman, Jerry R., Steele 63877
Cook, Oliver W., Caruthersville 63830
Cooper, Lawrence E., 1274 Hanton, Fort Myers, Fla.
Grable, James, Portageville 63873
Gubin, Alan S., Caruthersville 63830
Hensley, Daniel R., Lilbourn 63862
Limbaugh, Walter R., Hayti 63851
McCoy, Warren R., Caruthersville 63830
McKaskle, Clarence W., Caruthersville 63830
Painter, Andrew E., Portageville 63873
Painter, Lattie B., Jr., Portageville 63873
Shirey, Arnold G., Hayti 63851
Strittmatter, James C., Caruthersville 63830

PERRY-STE. GENEVIEVE COUNTIES MEDICAL SOCIETY

Carron, Oscar A., Perryville 63775
DeGenova, Gerard H., Ste. Genevieve 63670
Fairchild, James F., Perryville 63775
Feltz, Lawrence W., Perryville 63775
Fischer, Theodore, Altenburg 63732
Lanning, Richard C., Ste. Genevieve 63670
Legner, Stanley G., Perryville 63775
Lutkewitte, Joseph F., Ste. Genevieve 63670
McDermott, Alfred E., Perryville 63775
Miller, Oliver J., 1972 Bend Rd., Cape Girardeau 63701
Utterman, William F., Perryville 63775

PETTIS COUNTY MEDICAL SOCIETY
(Sedalia 65301)

Arnold, Richard C., 111 W. 4th St.
Beckemeyer, William A., 500 W. 116th St.
Bess, William E., 210½ S. Ohio St.
Boger, James W., 500 W. 16th St.
Brady, Charles H., Gorden Bldg.
Braverman, Elliot M., 1806 W. 11th St.
Brazos, John C., Smithton 65350
Campbell, A. J., 312½ S. Ohio St.
Daum, Harold F., Bothwell Memorial Hosp.
Edwards, David R., 700 Limit Ave.
Eldenburg, Donald, 700 S. Limit Ave.
Fisher, Stanley D., Sedalia
Gentry, Merritt L., Warsaw 65355
Glass, Robert L., 1400 State Fair Blvd.
Gonser, Karl B., 101 S. Ohio St.
Hopkins, Thomas J., 700 S. Limit Ave.
Hopkins, T. Spencer, 1609 S. Limit Ave.
Lamy, John E., 509 W. Broadway
Lowe, Alvin L., 621 W. 16th St.
Maddox, Albert R., 116½ W. Main St.
Osborne, Charles D., 710 W. Broadway
Owings, Raymond H., Bothwell Memorial Hosp.
Proctor, Donald C., 700 S. Limit Ave.
Rhodes, Euhlan L., Warsaw 65355
Roberts, Paul A., Sweet Springs 65351
Rodeman, John M., Gordon Bldg.
Siegle, Carl D., 1216 W. 18th St.
Stauffacher, C. Gordon, 700 Limit Ave.
Stewart, Robert H., Bothwell Memorial Hosp.
Van Dyke, Elmer H., 415 S. Lamine St.
Walter, Archie L., 500 W. 16th St.
Worley, Charles A., Sweet Springs 65351

PHELPS COUNTY
(Mid-Missouri County Medical Society)

PIKE COUNTY MEDICAL SOCIETY

Andrae, Robert L., Louisiana 63353
Christensen, Roger F., Louisiana 63353
Day, John K., Bowling Green 63334
Jackson, Edward K., Clarksville 63336
Lewellen, Charles H., Louisiana 63353
Martin, W. Joe, Louisiana 63353
Middleton, John W., Louisiana 63353
Smith, Ted P., Bowling Green 63334
Stuerman, Lawrence G., Louisiana 63353
Wilcoxen, William B., Bowling Green 63334

PLATTE COUNTY MEDICAL SOCIETY

Allen, S. Lloyd, 3505 Eastwood La., Kansas City 64151
Kimball, Ireland W., 5621 Valley Rd., Kansas City 64151
Lewis, Albert G., Platte City 64079
Parker, H. Graham, Platte City 64079
Robinson, John A., Edgerton 64444
Thurman, Hill C., Parkville 64152
Vescovo, Paul C., 4106 Vivion Rd., Kansas City 64117

POLK COUNTY
(Dallas-Hickory-Polk County Medical Society)

PULASKI COUNTY
(Mid-Missouri County Medical Society)

PUTNAM COUNTY
(North Central Counties Medical Society)

RALLS COUNTY
(Marion-Ralls-Shelby County Medical Society)

RANDOLPH COUNTY
(Chariton-Macon-Monroe-Randolph County Medical Society)

RAY COUNTY
(Lafayette-Ray County Medical Society)

REYNOLDS COUNTY
(Mineral Area County Medical Society)

RIPLEY COUNTY
(Butler-Wayne-Ripley County Medical Society)

ST. CHARLES COUNTY
(Lincoln-St. Charles County Medical Society)

ST. CLAIR COUNTY
(West Central Missouri Medical Society)

ST. FRANCOIS COUNTY
(Mineral Area County Medical Society)

STE. GENEVIEVE COUNTY
(Perry-Ste. Genevieve Counties Medical Society)

ST. LOUIS MEDICAL SOCIETY
(St. Louis)

Abel, Charles C., 4511 Forest Park Blvd. 63108
Abel, Oliver, III, 4511 Forest Park Blvd. 63108
Abell, Walter E., 2253 S. 39th St. 63110
Abrams, Morris, 4919 Forest Park Blvd. 63108
Acker, Harry L., 6150 Oakland Ave. 63110
Ackerman, Lauren V., 600 S. Kingshighway Blvd. 63110
Adler, Benard C., 4511 Forest Park Blvd. 63108
Agress, Harry, 634 N. Grand Blvd. 63103
Ahern, Archibald M., 3915 Watson Rd. 63109
Ahlering, George H., 950 Francis Pl. 63105
Aitken, Louis F., 3720 Washington Blvd. 63108
Akyol, Salim, 5540 Delmar Blvd. 63112
Aldrich, James T., 2621 Franklin Ave. 63106
Alexander, Harry L., 52 Maryland Plaza 63108
Allen, Henry C., Clayton Medical Bldg. 63105

Allen, Hollis N., 634 N. Grand Blvd. 63103
Allen, Melvin A., 3701 Grandel Sq. 63108
Allen, Willard M., 630 S. Kingshighway Blvd. 63110
Allen, William E., Jr., 720 N. Sarah St. 63108
Alonso-Yague, P., 100 N. Euclid Ave. 63108
Altheide, J. Paul, 607 N. Grand Blvd. 63103
Alvis, Bennett Y., 100 N. Euclid Ave. 63108
Alvis, Edmund B., 100 N. Euclid Ave. 63108
Anderson, John M., 1420 Grattan St. 63104
Anstey, George, 4660 Maryland Ave. 63108
Apicella, Frank V., 3310 Willow St., Omaha, Nebr.
Arneson, Axel N., 457 N. Kingshighway Blvd. 63108
Arney, William G., 16 Hampton Village Plaza 63109
Aronberg, Lawrence M., 2120 S. Warson Rd. 63124
Auer, Arthur I., 667 Langton St. 63105
Auer, Edward T., 9 Clayton Terr. 63131
Aufderheide, G. Russell, 2326 Noll Dr. 63136
Austin, Martin G., 40 Villa Coublay 63131
Aylward, Howard J., 410 Dielman Rd. 63132
Azuma, Nobutaka, 3901 Tholozan Ave. 63116
Azzouni, Joseph N., 8460 Watson Rd. 63119
Babka, Joseph J., 6400 Bancroft Ave. 63109
Backer, Matthias H., Jr., 3923 Watson Rd. 63109
Baggot, Michael G., 3010 Nameoki Rd., Granite City, Ill.
Bailey, Drennan, 6356 Clayton Rd. 63117
Bailey, Frank A., 3654 S. Grand Blvd. 63118
Balazs, Karl J., 3623 Cleveland Ave. 63110
Ball, Thomas J., Jr., 268 S. Washington St., Bergenfield, N. J.
Bandle, Donald F., 3801 January Ave. 63109
Banet, Samuel R., 7301 St. Charles Rock Rd. 63133
Banton, M. Roman, 2917 St. Louis Ave. 63106
Banton, William C., 2917 St. Louis Ave. 63106
Barden, Frank W., 41 Beaver Dr. 63141
Bardenheier, J. Phil, 6400 Morganford Rd. 63116
Barrett, Scott R., 5086 Easton Ave. 63113
Barrios, Francisco, 5641 Potomac Ave. 63139
Bartels, Leo G., 906 Olive St. 63101
Bartlett, Robert W., 100 N. Euclid Ave. 63108
Bartlett, Willard, Jr., 6744 Clayton Rd. 63117
Bartnick, Mitchel L., 7615 S. Broadway 63116
Bassett, Robert B., 5427 Delmar Blvd. 63112
Bauer, John D., Northland Medical Bldg. 63136
Bauer, Maria, 1935 Edison Ave., Granite City, Ill.
Bauer, Otto, 1935 Edison Ave., Granite City, Ill.
Baumann, William B., Letterman Gen. Hosp., San Francisco, Calif.
Baumgarten, Walter, Jr., 5505 Delmar Blvd. 63112
Bawell, Malcolm B., 4660 Maryland Ave. 63108
Beard, Daniel D., 1431 Claytonia Terr. 63117
Beare, J. Byron, 3720 Washington Blvd. 63108
Beato, David L., 4149 Cleveland Ave. 63110
Becke, William G., 3720 Washington Blvd. 63108
Becker, Bernard, 640 S. Kingshighway Blvd. 63110
Becker, Edward J., 906 Olive St. 63101
Becker, George H., 6744 Clayton Rd. 63117
Becker, Stanley C., 8110 Roxburgh Dr. 63124
Beckette, Edmund S., 950 Francis Pl. 63105
Beckman, Donald E., 4205 Virginia Ave. 63111
Behrens, Donald T., 6 Thorndell Dr. 63117
Behrens, Gerald L., 3 Colonial Ct. 63124
Beidle, Raymond J., 9440 Midland Ave. 63114
Belew, Joe E., A.P.O. 178, 11th Field Hosp., New York, N. Y.
Bell, Robert M., 3720 Washington Blvd. 63108
Benage, Clarence M., 4511 Forest Park Blvd. 63108
Benjamin, Durand, 7430 Virginia Ave. 63111
Berard, Louis N., 812 Olive St. 63101
Berg, Leonard, 4910 Forest Park Blvd. 63108
Berg, Ralph, 3203 S. Grand Blvd. 63118
Bergman, Hugo F., 3720 Washington Blvd. 63108
Bergmann, Dwayne, 6150 Oakland Ave. 63139
Bergner, Grace E., 114 N. Taylor Ave. 63108
Berland, Harry I., 812 Olive St. 63101
Berman, Joseph P., 1225 N. Grand Blvd. 63106
Berman, William, 4919 Forest Park Blvd. 63108
Bernard, Harvey R., 4960 Audubon Ave. 63110
Berry, John W., 9845 Northbridge 63124
Bersche, Bertram L., 7575 Parkdale Ave. 63105
Bettonville, Paul J., Jr., 6331 Pershing Ave. 63130
Biddy, Ralph L., 1221 S. Grand Blvd. 63104
Bilsky, Nathan, 4511 Forest Park Blvd. 63108
Bindbeutel, Arthur H., 5203 Chippewa St. 63109
Bindbeutel, Donald A., 630 Westborough Pl. 63119
Binder, Morton A., 4652 Maryland Ave. 63108
Bircher, John L., 3932 Federer Pl. 63116
Birge, Clifford A., 1057 Francis Pl. 63117
Birsner, Louis J., 634 N. Grand Blvd. 63103
Bisno, Daniel, 8000 Bonhomme Rd. 63105
Blair, Vilray P., Jr., 9 Stoney Brook La. 63124
Blalock, William N., 114 N. Taylor Ave. 63108
Block, Arnold S., 4919 Buckingham Ct. 63108
Bock, Lux H., 6130 Arendes Dr. 63116
Bockelman, Clifford H., 2615 Brentwood Blvd. 63117
Boedeker, Roy V., 100 N. Euclid Ave. 63108
Boemer, Lilburn C., 3720 Washington Blvd. 63108
Bohne, William R., 4500 Olive St. 63108
Bohrer, Harry C., 607 N. Grand Blvd. 63103
Boldizar, Albert G., 3720 Washington Blvd. 63108
Boldt, Thomas H., Northland Medical Bldg. 63136
Bolton, Robert L., 10247 W. National St., Milwaukee, Wisc.
Bond, Leslie F., 5801a Easton Ave. 63112
Bondurant, Bryce H., 134 Frontenac Forest 63131
Bonfanti, Albert L., 3225 Longfellow Blvd. 63104
Borowsky, Benjamin A., 100 N. Euclid Ave. 63108
Boswell, John R., 12918 Topping Estates 63131
Boucher, Robert E., 5907 Suson Place 63139
Bouhasin, John D., 3720 Hampton Ave. 63109
Boveri, Joseph C., 16 Hampton Village Plaza 63109
Bowdern, Edward H., 2 Berkshire La. 63117
Bowen, Stephen F., Jr., 16 Hampton Village Plaza 63109
Bowerman, Harold H., 607 N. Grand Blvd. 63103
Bowersox, Warren A., 214 N. First St., Pacific 63069
Bowles, G. Robert, 135 W. Adams Ave. 63122
Bowles, William T., 4960 Audubon Ave. 63110
Boyd, Arthur M., 1703 S. Grand Blvd. 63104
Bradley, Frank R., 600 S. Kingshighway Blvd. 63110
Bradley, Richard V., 35 N. Central Ave. 63105
Brangle, Robert W., 7333 Hurst Ct. 63116
Bremser, Harry L., 1105 Tower Grove Ave. 63110
Brennan, George A., 3654 S. Grand Blvd. 63118
Brennan, Robert A., 3654 S. Grand Blvd. 63118
Brennan, Robert V., 111 N. Taylor Ave. 63122
Brereton, Robert L., 206 N. Clay Ave. 63135
Bricker, Eugene M., 100 N. Euclid Ave. 63108
Bricker, Neal S., 660 S. Euclid Ave. 63110
Brielmaier, Charles R., 1535 N. Woodlawn Ave. 63122
Brinker, Ray A., 510 S. Kingshighway Blvd. 63110
Brodeur, Armand E., 141 Horseshoe Dr. 63122
Bronson, Shael S., 100 N. Euclid Ave. 63108
Brookes, Henry S., Jr., 37 Algonquinwood Pl. 63122
Brookes, Robert D., 5505 Delmar Blvd. 63112
Brooks, Arthur C., 60 Kingsbury Pl. 63112
Broun, Goronwy O., 1325 S. Grand Blvd. 63104
Broun, Goronwy O., Jr., 6359 Waterman Ave. 63105
Brown, E. Eugene, 379 N. Taylor Ave. 63108
Brown, James B., 100 N. Euclid Ave. 63108
Brown, James L., 5400 Arsenal St. 63139
Brown, James M., 4906 Southwest Ave. 63110
Brown, Seymour, 2 Ricardo La. 63124
Bruce, Helen L., 3263 Hawthorne Blvd. 63104
Bruns, Kenneth, 6318 Washington Blvd. 63130
Bryan, James H., 950 Francis Pl. 63105
Bryan, William T. K., 950 Francis Pl. 63105
Budd, John J., Jr., 9313 Manchester Rd. 63119
Bugg, George W., 2601 N. Whittier Ave. 63113
Bulger, Harold A., 4405 West Pine Blvd. 63108
Burford, Cyrus E., 6655 Waterman Ave. 63130
Burke, Robert J., 6379 Devonshire Ave. 63109
Burkhart, Edward F., 634 N. Grand Blvd. 63103
Burmeister, R. William, 9308 Buxton Dr. 63126
Burns, Francis J., 4660 Maryland Ave. 63108
Burst, Donald O., 6500 Chippewa St. 63109
Busch, Anthony K., 16 Hampton Village Plaza 63109
Butcher, Harvey R., Jr., 4960 Audubon Ave. 63110
Butsch, Richard H., 12025 Manchester Rd. 63131
Byars, Louis T., 100 N. Euclid Ave. 63108
Byrne, John E., 4660 Maryland Ave. 63108
Byrne, Paul A., 4211 Bayless Ave. 63123
Caciolo, Carlo, 1325 S. Grand Blvd. 63104
Cadice, John B., 10416 St. Ives Dr. 63136
Calkins, Delevan, 7171 Delmar Blvd. 63130
Callahan, Joseph D., 7227 St. Andrews Rd. 63121
Calodney, Martin M., 7247 Delmar Blvd. 63105
Camel, H. Marvin, 310 Tanglewood Dr. 63124
Campbell, Cecil S., 812 Olive St. 63101
Campos, Francisco J., 100 N. Euclid Ave. 63108
Canaan, Samuel A., Jr., 6829 Clayton Ave. 63110
Cannon, Edward M., 607 N. Grand Blvd. 63103
Cappel, Powel B., 3284 Ivanhoe St. 63139

Caravelli, Anthony F., Downey V. A. Hosp., Downey, Ill.
Carlin, M. Richard, 100 N. Euclid Ave. 63108
Carr, Archie D., 3720 Washington Blvd. 63108
Carroll, George A., 3720 Washington Blvd. 63108
Carroll, Grayson, 3720 Washington Blvd. 63108
Carter, John F., 15 Friese Dr. 63132
Cary, John M., 3720 Washington Blvd. 63108
Cason, Elbert H., 4401 Hampton Ave. 63109
Cassel, Melvin A., 3400 N. Kingshighway Blvd. 63115
Catanzaro, Anthony F., 2705 Clifton Ave. 63139
Catanzaro, Francis J., 1235 N. Hanley Rd. 63130
Chamness, James T., 3 Town & Country Dr. 63124
Chaplin, Hugh, Jr., 509 S. Euclid Ave. 63108
Charles, Benjamin H., 5505 Delmar Blvd. 63112
Charles, Cecil M., 110 S. Central Ave. 63105
Charnas, Raymond M., 607 N. Grand Blvd. 63103
Cherre, Anthony J., 6744 Clayton Rd. 63117
Cherre, Charles J., 4511 Forest Park Blvd. 63108
Chieffi, Margaret, 3720 Washington Blvd. 63108
Ciapciak, Stanley J., 1502 St. Louis Ave. 63106
Clark, Clarence L., 705 Questover La. 63141
Claseman, Wilma W., 1320 Market St. 63103
Cleary, Frank, 1935 Park Ave. 63104
Cleveland, Horace F., 1325 Somerset Pl., Long Beach, Calif. 90807
Clithero, William H., 1763 Royal Oaks Dr., Duarte, Calif.
Cloyd, Mason D., 914 N. Taylor Ave. 63108
Coben, Lawrence A., 640 S. Kingshighway Blvd. 63110
Coffin, Ernest L., 145 Vassar Dr., Lake Worth, Fla
Cohen, Benjamin H., 138 N. Meramec Ave. 63105
Cohen, Louis, 8200 Gannon Ave. 63132
Cohen, Robert S., 630 S. Kingshighway 63110
Cole, William R., 1401 Lawnwood Dr. 63123
Collodi, George A., 20 Southcote Dr. 63117
Comens, Phillip, 6500 Chippewa St. 63109
Comens, Ruth C., 8715 Gayle Ave. 63126
Conrad, Adolph H., Jr., 3720 Washington Blvd. 63108
Conrad, Marshall B., 5505 Delmar Blvd. 63112
Cook, Ralph L., 44 Nolan Dr. 63122
Cooper, Henry T., 818 Olive St. 63101
Cooper, Theodore, 934 Coffey Dr. 63126
Cooper, Thomas J., 138 N. Meramec Ave. 63105
Copher, Glover H., 600 S. Kingshighway Blvd. 63110
Copp, Ralph, Jr., 3720 Washington Blvd. 63108
Corday, Robert J., 1465 S. Grand Blvd. 63104
Cordonnier, Justin, 4960 Audubon Ave. 63110
Correnti, Nicholas A., 100 N. Euclid Ave. 63108
Costa, Dominic V., 16 Hampton Village Plaza 63109
Costello, Cyril J., 100 N. Euclid Ave. 63108
Costello, Joseph P., Jr., 57 Berkshire Ave. 63117
Costen, William S., 5505 Delmar Blvd. 63112
Coughlin, Bertrand D., 634 N. Grand Blvd. 63103
Cox, Mary E., 4524 Forest Park Blvd. 63108
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Sunderman, Raymond C., 4943 Natural Bridge Rd. 63115
Sunshine, Herbert, 6342 San Bonita Ave. 63105
Susanka, William D., 9438 Gravois Ave. 63123
Susman, Noah, 4511 Forest Park Blvd. 63108
Swarm, Richard L., P. O. Box 5853, Bethesda, Md.
Sweet, Herbert C., 3 St. James Ct. 63119
Swope, Joseph A., 432 Woodlawn Ave. 63119
Tanaka, George M., 50 Grasso Pl. 63123
Tapper, Stephen M., 3654 S. Grand Blvd. 63118
Tate, Lloyd L., 901 Washington Ave. 63101
Tatkow, Robert W., 4919 Forest Park Blvd. 63108
Taussig, Barrett L., 4511 Forest Park Blvd. 63108
Taute, Herman, 6744 Clayton Rd. 63117
Taylor, Eugene D., 2322 N. Kingshighway Blvd. 63113

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Taylor, Helen L., 5930 Delmar Blvd. 63161
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Tess, Melvin J. H., 1501 Switzer St. 63147
Thale, Thomas, 4511 Forest Park Blvd. 63108
Thiel, J. Allen, 141 N. Meramec Ave. 63105
Thierauf, Charles G., 4323 S. Grand Blvd. 63111
Thoma, George E., Jr., 1402 S. Grand Blvd. 63104
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Thomas, Lewis J., Jr., 600 S. Kingshighway Blvd. 63110
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Thurman, Manfred, 1325 S. Grand Blvd. 63104
Thym, Henry P., 950 Francis Pl. 63105
Tibbs, William A., Jr., 8128 University Dr. 63115
Tichenor, Robert W., P. O. Box 8568 63126
Tillman, Mary A. T., 4529 Red Bud Ave. 63115
Tindall, Robert N., 6500 Chippewa St. 63109
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Tremain, Irl G., 4254 Flora Pl. 63110
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Tripodi, Anthony M., 1312 Golden Rain Rd., Seal Beach, Calif.
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Will, Leo A., 339 Marius Rd., N. Port Charlotte, Venice, Fla.
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Willms, Janice L., 231 4th Ave. W., Gooding, Idaho
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Wilucki, Melvin R., 8916 Gravois Ave. 63123
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Witt, Frederick W., 1617 S. Brentwood Blvd. 63117
Wittgen, Edward M., 8901 Rock Forest Dr. 63123
Wolfe, Edward, 2640 White Wood. Ann Arbor, Mich.
Wolfgram, Edwin D., 4500 West Pine Blvd. 63108
Wood, Bennett R., 3442 Geraldine Ave. 63115
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Woods, Ralph E. 950 Francis Pl. 63105
Woolf, Ralph B., 630 S. Kingshighway Blvd. 63110
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Wotawa, William J., 3804 Wilmington Ave. 63116
Wurr, Dieter, 135 W. Adams Ave. 63122
Ylagan, Amando, Jr., 5203 Chippewa St. 63109
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Younger, Ernest, 3624 Russell Blvd. 63110
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Zeffren, Joel L., # 15 N. Brentwood Blvd. 63105
Ziegelmeyer, John S., 3733 Lindell Blvd. 63108
Zillgitt, George H., 4501 Manchester Ave. 63110
Zingale, Frank G., 6500 Chippewa St. 63109
Zink, Oscar C., # 9 The Orchards 63105
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Brennan, Patricia A., 111 Church Rd. 63135
Briscoe, John R., 2648 Oakview Ter. 63117
Brother, George M., # 34 N. Brentwood Blvd. 63105
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Burstein, Robert, 100 N. Euclid Ave. 63108
Bussmann, Donald W., # 4 Wood Acre Rd. 63124
Cacioppo, Joseph E., 3400 N. Kingshighway Blvd. 63115
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Carrier, John A., 4401 Hampton Ave. 63109
Carroll, Percy J., # 40 Briar Cliff La. 63124
Carter, Edwin E., 950 Francis Pl. 63105
Catanzaro, Rudolph E., # 24 Foxboro Rd. 63124
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Ciampa, Thomas, 114 E. Lockwood Ave. 63119
Coates, Thomas A., 1200 S. Big Bend Blvd. 63117
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Cokrhame, Jack, 11067 Bellefontaine Church Rd. 63138
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Collins, John M., 6432 Hampton Ave. 63109
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Compton, James R., 2480 Whittier St., La Habra, Calif. # 2, 90631
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Costrino, John J., 922 Jeanerette Dr. 63130
Costrino, Joseph A., 2407 N. Broadway 63106
Cowdry, Edmund V., Jr., 100 N. Euclid Ave. 63108
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Crawford, Katherine J., 7115 Washington Blvd. 63130
Cullum, Albert G. J., 920 Dorchester St., Middleboro, Ky.
Cutler, Harry, 4511 Forest Park Blvd. 63108
Daughaday, William H., 600 S. Kingshighway Blvd. 63110
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Dean, Lee W., Jr., 9067 Clayton Rd. 63117
De Hovitz, Bernard, 950 Francis Pl. 63105
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Dowd, James F., Jr., # 30 West Brentmoor Park 63105
Drescher, Emmett B., # 35 N. Central Ave. 63105
Drum, Helen M. A., 1412 Spoede Rd. 63124
Duggan, John J., Jr., 333 S. Kirkwood Rd. 63122
Dulick, Michael, 9012 Manchester Rd. 63117
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Eber, Carl T., 611 Olive St. 63101
Ecker, Decider B., Pacific 63069
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Eisenstein, Albert B., 818 S. Meramec Ave. 63105
Eller, C. Howe, 801 S. Brentwood Blvd. 63105
Ellis, Calvin C., 11627 Fallbrook Dr. 63131
Ellison, Leroy E., 7346 Myrtle Ave. 63117
Elson, Julius, # 5, Granada La. Hacienda 63124
Emerson, Reynolds L., 1695 Brentwood Blvd. 63144
Ernst, Joseph G., # 68 Fortune La. 63122
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Fairshter, Alex E., # 9 Blackpool La. 63132
Falk, O. P. J., # 3 Southmoor Dr. 63105
Feldaker, Robert M., 817 N. McKnight Rd. 63132
Feldman, David, 8631 Delmar Blvd. 63124
Ferrara, John P., Northland Medical Bldg. 63136
Fingerhood, Marvin G., 1434 Chambers Rd. 63135
Fingert, H. H., 4542 Maryland Ave. 63108
Finkel, Barney W., 6510 W. Florissant Ave. 63120
Finley, Freeman L., 2475 Hartland Ave. 63114
Fleming, Paul D., Route 2, Box 29, Waterloo, Ill.
Fletes, James W., 7270 Natural Bridge Ave. 63121
Flynn, Thomas T., 1617 S. Brentwood Blvd. 63144
Forsman, Waldo W., Jr., 4128 S. Lindberg Blvd. 63126
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Freiheit, Harold J., # 3 Devondale La. 63131
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Gibstine, Marvin H., 10517 St. Charles Rd. 63114
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Harris, Hinman A., 7331 Canton St. 63130
Harrison, Stanley L., 1801 Hinman Ave., Evanston, Ill.
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Huck, Frank F., 408 Gravois Rd., Fenton 63026
Hudgens, Richard W., 708 Radcliffe Ave. 63130
Hughes, Robert G., 11745 Olive St. Rd. 63141

Irick, Carl C., 2914 Hawthorne, Naples, Fla. 33940
Izmirlian, Grant, 7961 Big Bend Blvd. 63119
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Lansche, W. Edward, 5505 Delmar Blvd. 63112
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McClure, David N., 950 Francis Pl. 63105
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McKee, Oliver A., N. Kirkwood Rd. & Washington 63122
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McManamon, Thomas V., 6250 N. Lindburgh Blvd., Hazelwood 63042
McMurray, Herbert C., Manchester 63062
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Mayer, Robert A., 950 Francis Pl. 63105
Meador, James R., 150 N. Meramec Ave. 63105
Meagher, Arthur J., 3654 S. Grand Blvd. 63118
Melburn, Colleen M., 807 Stadium Rd., Columbia 65201
Mendelson, David F., 141 N. Meramec Ave. 63105
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Montes-de-Oca, Julio, 11157 Conway Rd. 63131
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Moore, Harry G., Jr., 4511 Forest Park Blvd. 63108
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Mullarky, Wilbur A., # 7 Beaver Dr. 63124
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Nakada, James R., 950 Francis Pl. 63105
Nash, W. Hampton, 819 Locust St. 63101
Nelson, J. Roger, 135 W. Adams St. 63122
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Nuetzel, John A., 950 Francis Pl. 63105
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O'Bannon, L. W., Jr., 11895 North Ranch Dr. 63033
O'Connor, Robert J., 751 St. Francois St. 63131
Oglesby, Richard B., 950 Francis Pl. 63105
O'Keefe, Joseph D., 135 W. Adams Ave. 63122
O'Neal, Patricia, 4580 Scott Ave. 63110
Ott, Harold J., 2816 Sutton Ave. 63143
Ottensmeyer, Charles D., 2035 Goodale Ave. 63114
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Pennoyer, James, 117 Plant Ave. 63119
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Robertson, Frank G., 634 N. Grand Blvd. 63103
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Roblee, Melvin A., # 35 N. Central Ave. 63105
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Roodman, Herman J., 2428 Woodson Rd. 63114
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Rosenbaum, Herbert E., 100 N. Euclid Ave. 63108
Rosenstein, Daniel L., 216 S. Kingshighway Blvd. 63110
Roufa, Joseph F., 539 N. Grand Blvd. 63103

Rouse, Ernest T., 100 N. Euclid Ave. 63108
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Scheele, Paul M., 135 W. Adams Ave. 63122
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Schultz, E. Robert, 9840 Copper Hill Rd. 63124
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Silverberg, Charles, #45 Rio Vista Dr. 63124
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Skilling, David M., Jr., # 18 S. Kingshighway Blvd. 63108
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Smit, Herbert M., 539 N. Grand Blvd. 63103
Smith, George E., 12629 Rott Rd. 63126
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Spoeneman, Marlin C., 7205 W. Florissant Ave. 63136
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Stein, Harry J., 6917 W. Florissant Ave. 63120
Stein, Leonard A., 2618 Oregon Ave. 63118
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Stephens, William A., 3720 Washington Blvd. 63108
Sterling, John A., 1230 Kenmore Dr. 63122
Stevens, Robert W., 9311 Duenke Dr. 63137
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Stickle, A. W., 135 W. Adams Ave. 63122
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Stuebner, Roland W., # 35 N. Central Ave. 63105
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Sutphin, John B., 111 Church Rd. 63135
Sutter, Richard A., 7215 Greenway Ave. 63130
Tashma, Sigmund, 5847 Pershing Ave. 63112
Teiber, Frederick W., 3201 Washington Blvd. 63103
Thiele, Belmont R., 10261 Thornwood Dr. 63124
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Torin, Bernice A., 951 Old Bonhomme Rd. 63132
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Townsend, Vincent F., 7532 Byron Pl. 63105
Treiman, Robert C., # 7 Radnor Rd. 63131
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Trueblood, Alva C., Jr., 325 N. Kirkwood Rd. 63122
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Valach, Frank J., 1617 S. Brentwood Blvd. 63117
Vanderpearl, Robert H., 851 Edlin Dr. 63122
Vatterott, Paul B., 10300 St. Charles Rock Rd. 63114
Viers, Wayne A., 135 W. Adams Ave. 63122
Vinyard, Paul, 3718 Olive St. 63108
Viraghaty, Julius Gy., Route 1, Box 483, Manchester 63062
Vitale, Anthony J., 7130 Natural Bridge Rd. 63134
Vitale, Nicholas S., 7130 Natural Bridge Rd. 63134
Vizgird, J. J., 3511 University Ave. 63107
Vollmar, Clarence J., 8787 Big Bend Blvd. 63119
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Walker, Harvey, Jr., 6924 Waterman Ave. 63130
Walker, Willard B., # 35 N. Central Ave. 63105
Wall, Albert, 5322 Helen Ave. 63120
Walter, William L., 135 W. Adams Ave. 63122
Walther, Roy A., Jr., # 7 High Acres 53132
Waters, E. B., 126 E. Jefferson Ave. 63122
Weber, J. R., 135 W. Adams Ave. 63122
Weber, Sol. 607 N. Grand Blvd. 63103
Weber, William K., 4323 Gladwyn Dr., Bridgeton 63044
Weinhaus, Robert S., 7165 Delmar Blvd. 63130
Weisbrod, Wilfred B., 1025 North & South Rd. 63130
Weisman, Renate D., 2050 Woodson Rd. 63114
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Weitman, Maximilian, 3530 Arsenal St. 63118
Wenneker, Alvin S., 8112 Delmar Blvd. 63130
Werth, Duncan S., # 61 N. Taylor Woods 63122
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Wissmath, Frank S., #35 N. Central Ave. 63105
Wittler, Harry A., 2817 Manderly Dr. 63144
Wolff, Harold D., 4511 Forest Park Blvd. 63108
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Wood, James A., Clayton Medical Blvd. 63105
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Yanow, Mitchell, 201 S. Central Ave. 63105
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Zwirn, Benjamin H., Northland Medical Bldg. 63136

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Aiken, Richard F., Marshall
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McBurney, C. A., Slater 65349
McCorkle, E. Lee, Marshall
Madison, Waite H., 4646 Benton Blvd., Kansas City 64130
Mead, Samuel T., Slater 65349
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Roehrs, Marvin E., Marshall
Sloan, Roy C., Marshall
Watson, Cecil L., Marshall

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(North Central Counties Medical Society)

SCOTLAND COUNTY
(Lewis-Clark-Scotland County Medical Society)

SCOTT COUNTY
(SEMO County Medical Society)

SEMO COUNTY MEDICAL SOCIETY
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Dernoncourt, John E., Charleston 63834
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O'Dell, Timothy T., Oran 63771
Page, Jesse W., Sikeston 63801
Popp, Carl G., Sikeston 63801
Reeder, Charles C., New Madrid 63869
Rehm, Ralph, Bloomfield 63825
Rolwing, E. Charles, Charleston 63834
Sargent, Alden P., Sikeston 63801
Sargent, John P., Sikeston 63801
Sarno, Samuel M., Morehouse 63868
Smith, Audra B., Sikeston 63801
Throgmorton, Howard B., Sikeston 63801
Tull, Frank, Sikeston 63801
Urban, Edgar D., Sikeston 63801
Waddle, Theodore L., Dexter 63840
Waltrip, Roy T., Jr., Sikeston 63801
Whitaker, Topsey H., East Prairie 63845

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(Carter-Shannon County Medical Society)

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(Marion-Ralls-Shelby County Medical Society)

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Denney, Richard W., Mountain Grove 65711
Dreyer, William F., Houston 65483
Fowler, Marvin L., West Plains 65775
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Miller, Harold W., Willow Springs 65587

Morgan, W. Thomas, Jr., West Plains 65775
Smith, C. Franklin, Willow Springs 65587
Smith, Rollin H., West Plains 65775
Spears, Joe L., Cabool 65445
Tiffany, D. E., Mountain View 65548
Walker, Ambrose T., Mammoth Springs, Ark.
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Walton, Marion C., Mountain View 65548
Wiles, Jack N., West Plains 65775

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Beers, Ellsworth G., Seymour 65746
Macdonnell, Carey R., Marshfield 65706
Macdonnell, Thomas M., Marshfield 65706

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Allen, William H., Nevada 64772
Barger, O. B., Harrisonville 64701
Barone, Paul L., Nevada 64772
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Brownsberger, Robert H., Appleton City 64724
Davis, C. Braxton, Nevada 64772
Doggett, Sylvester, Sikeston 63801
Eklund, Alfred W., Pleasant Hill 64080
Ellett, William H., Appleton City 64724
Giesler, Donald H., Osceola 64776
Hansen, Arthur L., Butler 64730
Haynie, William W., 2025 Swift Ave., Kansas City 64106
Jones, Edward S., Harrisonville 64701
King, Elbert R., Route 2, Boise, Idaho
LaHue, Lilbourn D., Butler 64730
Long, Curtis W., Butler 64730
Long, David S., Harrisonville 64701
Love, Walter S., Nevada 64772
Lusk, Charles A., Jr., Butler 64730
Luter, Carter W., Butler 64730
McCann, Louis P., Nevada 64772
Magee, Robert L., El Dorado Springs 64744
Martin, Forrest L., Nevada 64772
Masor, Nathan A., Butler 64730
Moody, Jackson C., Methodist Hosp., Bedor Mysore State, India
Morrison, George B., Nevada 64772
Mullinax, Orr, Nevada 64772
Pascoe, James J., Nevada 64772
Pearse, Roy W., Jr., Nevada 64772
Pickens, E. Allen, Nevada 64772
Richter, William B., Stockton 64785
Rinck, Edward C., Nevada 64772
Ronald, Douglas C., Butler 64730
Stewart, Worley K., El Dorado Springs 64744
Strobach, Robert L., Butler 64730
Tracy, Herbert A., Belton 64012
Wheeler, Robert L., Harrisonville 64701
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WORTH COUNTY
(Northwest Missouri Medical Society)

Woman's Auxiliary to MSMA

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FALL CONFERENCE—October 20-21, 1965—Holiday Inn—Poplar Bluff

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7th & Jule Sts., St. Joseph 64501

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THIRD DISTRICT: St. Louis City.

FOURTH DISTRICT: Franklin-Gasconade-Warren, Jefferson, Lincoln-St. Charles, St. Louis County.

FIFTH DISTRICT: Audrain, Boone, Callaway, Camden,** Cole, Cooper, Howard,* Miller-Morgan-Moniteau, Montgomery.*

SIXTH DISTRICT: Benton,* Henry,* Johnson, Lafayette-Ray, Pettis, Saline, West Central (Bates, Cass, Cedar, St. Clair, Vernon).

SEVENTH DISTRICT: Jackson County.

EIGHTH DISTRICT: Barton-Dade,* Dallas-Hickory-Polk,* Green, Jasper, Ozarks** (Barry, Christian, Lawrence, McDonald, Newton, Stone, Taney),* Webster.*

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* No organized Auxiliary.
** No Medical Society.

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Mrs. John T. Logue
912 Crestland Ave., Columbia 65201
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Mrs. E. F. Butler
3110 Douglas, St. Joseph 64506
Butler-Ripley-Wayne
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Route 2, Hiway 67S., Poplar Bluff 63901
Callaway
Mrs. Jay Tuttle
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Mrs. Gordon Nunnelly
1432 Themis Street, Cape Girardeau 63701

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Mrs. James Gordon
600 Boonville Road, Jefferson City 65101
Cooper
Mrs. Dyke Hata
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Dunklin
Mrs. Leo J. Benson
204 Wiggs, Kennett 63857
Franklin-Gasconade-Warren
Mrs. L. O. Muench
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Grand River
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Cainsville 64632
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710 N. Sergeant, Joplin 64803
Jefferson
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Miller-Morgan-Moniteau
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4212 Flora Place, St. Louis 63110
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South Central
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115 West Pine, El Dorado Springs 64744

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Mrs. August A. Werner* (St. Louis City)	1948-49
Mrs. John J. O'Connell (St. Louis County) 1937 O'Connell Ave., Overland 63114	1949-50
Mrs. Dwight T. Van Del (Jackson) 6737 Rockhill Road, Kansas City 64131	1950-51
Mrs. W. Carey Cheek (Greene) 1535 E. Meadowmere, Springfield 65804	1951-52
Mrs. Richard A. Sutter (St. Louis County) 7215 Greenway Drive, University City 63130	1952-53
Mrs. C. Alex McBurney (Saline) 927 Hurt St., Slater 65349	1953-54
Mrs. W. E. Martin (Lafayette-Ray) 403 S. Second St., Odessa 64076	1954-55
Mrs. Frank B. Leitz (Jackson) 6832 Locust St., Kansas City 64131	1955-56
Mrs. Charles T. Shepherd (St. Louis County) 10 Covington Meadows, St. Louis 63131	1956-57
Mrs. Armand D. Fries (St. Louis City) 11 West Geyer Lane, St. Louis 63131	1957-58
Mrs. Henry C. Bauman (Northwest Missouri) 929 W. Third St., Maryville 64468	1958-59
Mrs. Stanley S. Peterson (Greene) 721 E. Stanford St., Springfield 65804	1959-60
Mrs. Jordon Kelling (Lafayette-Ray) Waverly 64096	1960-61
Mrs. Frederick E. Wade (Jackson) 413 W. 62nd St., Kansas City 64113	1961-62
Mrs. J. Martyn Schattyn (St. Louis County) 9 Huntleigh Downs, St. Louis 63131	1962-63
Mrs. Lawrence S. Crispell (Jasper) 911 Kensington Road, Joplin 64801	1953-64
Mrs. Delevan Calkins* (St. Louis City)	1964-

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* Deceased.
** National President.

Roster of Woman's Auxiliary Members by Society

AUDRAIN COUNTY
(Mexico 65265)

Davis, Mrs. Leonard L., Jr., 725 Lakeview Ave.
Dwyer, Mrs. Thomas L., 301 N. Cole
Ekern, Mrs. H. Peter, 1502 Ringo
Epple, Mrs. Lawrence K., 502 E. Monroe
Garcia, Mrs. C. L., 8 Melody La.
Jolley, Mrs. J. F., 726 W. Monroe
Jolly, Mrs. Ben, 1421 S. Jefferson Rd.
Jolly, Mrs. William H., 9 Park Circle
Kittleberger, Mrs. George William, 1101 West St.
Lankford, Mrs. Harold D., 1025 S. Olive
O'Brien, Mrs. Harry F., 408 Harvard
Parrish, Mrs. J. C., 206 West State St., Vandalia 63382
Rodes, Mrs. Ned D., 625 Lakeview
Rouse, Mrs. David M., 1415 Hickory Hill
Wallace, Mrs. Ed S., 811 S. Jefferson

BOONE COUNTY
(Columbia 65201)

Allen, Mrs. Joseph, 2000 N. Allen Dr.
Allen, Mrs. William, 2401 Highland Dr.
Almond, Mrs. Carl, 912 Danforth Dr.
Anderson, Mrs. Philip C., 908 Edgewood
Asel, Mrs. Norman, 1112 S. Glenwood
Austin, Mrs. George C., 103 Longfellow La.
Baker, Mrs. James, Route 4
Baker, Mrs. Sherwood A., 2620 Walther Ct.
Basket, Mrs. Edgar, 1316 Bass Ave.
Black, Mrs. Samuel, 300 S. Glenwood
Bradford, Mrs. O. F., Frederick Apts.
Brooke, Mrs. Clement E., 901 Edgewood
Bruner, Mrs. Claude, 511 S. Glenwood
Buesseler, Mrs. John, 813 Maupin Rd.
Bamgarner, Mrs. James, 1815 Rollins
Bamgarner, Mrs. Roger, Route 1
Burns, Mrs. Thomas, 1009 S. Providence Rd.
Chalkley, Mrs. Judson, 614 W. Stewart Rd.
Cochran, Mrs. Donald, 112 Sappington
Cooper, Mrs. Maurice, 1000 Wayne Rd.
Cope, Mrs. James, Route 1, Rocheport
Crouch, Mrs. Richard, 308 Hitt, Manor House Apt.
Darnell, Mrs. Thomas F. B., 2617 Walther Ct.
Denninghoff, Mrs. James C., 1906 Vassar
DeWeese, Mrs. Marion, 920 Edgewood
Eggers, Mrs. William, 100 Westwood
Evans, Mrs. Alden, 807 Maupin Rd.
Flynn, Mrs. Joseph, 1121 South Glenwood
Froelich, Mrs. Robert E., 604 W. Broadway
Fuchs, Mrs. George, Jr., 1026 Hickory Hill Dr.
Galeota, Mrs. William, 1719 Ridgemont
Garrett, Mrs. Glen, 102 E. Brandon Rd.
Griffin, Mrs. William T., 107 Westwood
Hall, Mrs. David G., 1014 S. Glenwood
Hall, Mrs. John, 308 Hitt St.
Hardwicke, Mrs. Henry, Ashland 65010
Harris, Mrs. Robert J., 2008 Hazelwood Dr.
Jackson, Mrs. Robert L., 1103 W. Stewart Rd.
Johnson, Mrs. Richard, 109 Westridge Dr.
Keown, Mrs. Kenneth, 402 Westmount
Kubin, Mrs. Milford, Route 4
La Chance, Mrs. Leopold, Centralia 65240
Ladenson, Mrs. Roland, 704 Westmount
Leech, Mrs. Charles, 815 W. Stewart Rd.
Leeper, Mrs. Sidlee W., 1309 Ridge Rd.
Litwiller, Mrs. Raymond W., 1312 West Broadway
Logue, Mrs. John, 912 Crestland
Lohmar, Mrs. Roland E., 1501 West Blvd. Ct.
Lowney, Mrs. John F., 15 Clinton Dr.
Lucas, Mrs. Fred, 2 Ridgeley Rd.
Mackenzie, Mrs. James William, 509 Westmount
Marienfeld, Mrs. Carl, 304 Longfellow La.
Martt, Mrs. Jack, 2205 Danforth Ct.
Mayer, Mrs. William, 1000 Lakeshore Dr.
McElroy, Mrs. Glenn, Route 3
Metzgar, Mrs. Marshall T., 1205 Fieldcrest
Miller, Mrs. LeRoy, 32 Bingham Rd.
Mitchell, Mrs. Frank, 810 Greenwood Ct.
Modlin, Mrs. John, 706 Thilly
Overholser, Mrs. Milton, 110 E. Brandon Rd.
Payne, Mrs. John, 805 W. Broadway
Pearman, Mrs. Carl C., 214 Texas
Pingleton, Mrs. William, 113 Tracy Dr.
Plumlee, Mrs. John E., 2606 Summit Rd.
Ray, Mrs. C. Thorpe, 822 Greenwood Ct.
Ridings, Mrs. G. Ray, 810 Yale
Robnett, Mrs. Dudley A., 2103 S. Country Club Dr.
Rodgers, Mrs. Elrie, 202 S. Glenwood
Ross, Mrs. Gilbert, 300 McNabb Dr.
Sabates, Mrs. Felix, 308 Bourn Ave.
Scheuber, Mrs. Charles, 505 W. Boulevard S.
Schmidtke, Mrs. Edwin C., 105 S. Glenwood
See, Mrs. William, 1611 University
Senhauser, Mrs. Donald A., 1801 Ridgemont
Sheppard, Mrs. Lee C., Jr., 608 Manor Dr.
Sights, Mrs. Warren, 309 Tracy Dr.
Smith, Mrs. J. Ned, Jr., 701 W. Boulevard S.
Smith, Mrs. Joe R., East Parkway
Spratt, Mrs. John, Jr., 204 Leslie La.
Spurgeon, Mrs. Mile, 404 Edgewood
Stephenson, Mrs. Hugh E., 1004 Falcon Dr.
Stewart, Mrs. William J., Route 5
Stoeckle, Mrs. Harry, 2226 Shepard Blvd.
Thomas, Mrs. Horace E., 503 Russell Blvd.
Thompson, Mrs. Ian, 504 Edgewood
Tinsley, Mrs. John C., 104 S. Glenwood
Van Peenen, Mrs. Hubert J., 923 Greenwood
Waggoner, Mrs. Charles, 712 Hilltop Dr.
Walters, Mrs. John, 1027 Hickory Hill Dr.
Washington, Mrs. Edward L., 204 Stewart Rd.
Watson, Mrs. Trevor F., 2319 Bluff Blvd.
Weiss, Mrs. James, 101 S. Glenwood
White, Mrs. J. Earl, 104 East Parkway
Wilson, Mrs. George P., 918 Westwinds Dr.
Wilson, Mrs. Vernon, Route 4
Windmiller, Mrs. M. Eugene, 210 S. Glenwood
Wolcott, Mrs. Lester E., 2417 Beachview Dr.

BUCHANAN COUNTY
(St. Joseph)

Acuff, Mrs. Robert P., 3015 Miller Rd. 64506
Baker, Mrs. W. C., Savannah 64485
Beck, Mrs. Paul M., 3216 Coronado Rd. 64505
Benson, Mrs. Scott C., 1404 N. 26th St. 64506
Berney, Mrs. Francis J., 1225 N. 10th St. 64501
Bristow, Mrs. Robert B., 1610 Ashland 64506
Bryant, Mrs. Sydney L., 3902 N. 29th 64506
Butler, Mrs. E. F., 3110 Douglas 64506
Byrne, Mrs. J. I., 1915 Lovers La. 64505
Callman, Mrs. George, State Hospital 64502
Carle, Mrs. H. W., Jr., 2707 N. 26th 64506
Carpenter, Mrs. G. T., 2612 Indian Trail Dr. 64506
Chiarottino, Mrs. Joseph F., 11 Lindenwood La. 64505
Christ, Mrs. Martin H., 414 Benton Dr. 64504
Craig, Mrs. Owen W. D., 1625 Crescent Dr. 64506
Craig, Mrs. Richard O., 2724 Felix 64501
Curran, Mrs. Herbert, 2123 Newport Rd. 64505
Day, Mrs. Maxwell, 2111 Lovers La. 64505
DuMont, Mrs. Clement, 1905 Francis 64501
Durham, Mrs. S. L., Dearborn 64439
Fisher, Mrs. Joseph L., 2903 Ashland 64506
Forgrave, Mrs. John R., 1908 Clay 64501
Forgrave, Mrs. Leon Paul, Hundley Dr. 64506
Forman, Mrs. George W., 2412 Ashland 64506
Grant, Mrs. Claude S., 7 Lindenwood La. 64505
Gray, Mrs. W. W., 3102 S. 22nd 64503
Grimes, Msr. Manning E., 815 N. Noyes Blvd. 64506
Gunter, Mrs. Joe S., 1609 Ashland 64506
Hartigan, Mrs. F. X., 1801 Ashland 64506
Grimes, Mrs. Manning E., 815 N. Noyes 64506
Herman, Mrs. Allen I., 1909 N. 32nd 64506
Howden, Mrs. Thomas L., 2723 Francis 64501
Ide, Mrs. Lucien, 1416 N. 25th 64506
Kieber, Mrs. R. W., 1915 N. 33rd 64506
Kline, Mrs. Edmund W., 17 Stonecrest 64506
Knepper, Mrs. Paul, 2002 Ashland 64506
Kulowski, Mrs. Jacob, 2515 Francis 64501
Lee, Mrs. Carleton H., 2716 Douglas 64506
Luckinbill, Mrs. Paul, Plattsburg 64477
Mabrey, Mrs. John P., Plattsburg 64477
Maginn, Mrs. R. L. 1813 Lovers Lane Hts. 64505
Marston, Mrs. F. James, 3212 Coronado 64505
Martin, Mrs. John, 9 Lindenwood La. 64505
McDaniel, Mrs. John R., 1808 N. 29th 64506
McDonald, Mrs. Wilbur P., 6 Country Club Rd. 64505
McGlothlan, Mrs. A. B., 821 N. 24th 64506
Meluney, Mrs. S. E., 1810 N. 30th 64506
Moen, Mrs. Berwyn H., 2214 Carper Dr. 64506
Morse, Mrs. Marvin W., 2702 Faraon 64501
Mothershead, Mrs. John L., 2630 Fairleigh Terr. 64506
Ness, Mrs. Carl K., 8 Lindenwood La. 64505
O'Connor, Mrs. William B., 2316 N. 22nd 64505
Petersen, Mrs. Harold E., 2902 Frederick 64506
Pettit, Mrs. Manson B., 3315 Frederick 64506
Pfeffer, Mrs. Robert, 1915 N. 29th 64506
Potter, Mrs. Caryl, Jr., 2232 Eugene Field Ave. 64505
Potter, Mrs. Thompson E., 2106 Lovers La. 64505
Redmond, Mrs. William, 3102 Jule 64501
Riddell, Mrs. Richard V., 2610 Indian Trail Dr. 64506
Rogers, Mrs. John T., 2502 Ashland 64506
Rosenthal, Mrs. Irwin, 2715 Union 64506
Rost, Mrs. William B., 2221 Northwest Ext. 64506
Roundy, Mrs. Collis I., Route 2 64505
Saferstein, Mrs. T. H., 2903 Sherman 64504
Senne, Mrs. Herbert C., 1308 S. Noyes 64507
Shevlin, Mrs. Charles F., 804 N. 25th 64506
Sklenar, Mrs. Donald E., 3824 Mitchell
Smith, Mrs. Clifton, 2821 Ashland 64506
Stallard, Mrs. Donald J., 1417 N. 25th 64506
Thomas, Mrs. Forrest, 1301 N. 25th 64506

Thompson, Mrs. F. Gregg, Jr., 31 Hall 64506
Thompson, Mrs. F. Gregg, III, 2714 Ashland 64506
Tovar, Mrs. Manuel, 1707 Brookside Dr. 64506
Wadlow, Mrs. Ernest E., 2611 Lovers La. 64506
Waggoner, Mrs. Sharon E., 5820 S. 3rd 64504
Weed, Mrs. Randall W., 1821 Clay 64501
Weinand, Mrs. Ernest, 2806 Mulberry 64506
Whitsell, Mrs. Ora Earl, 2306 Sacramento 64507
Willman, Mrs. Charles, 2115 Lovers La. 64505
Willumsen, Mrs. Henry C., 2209 Eugene Field Ave. 64505

BUTLER-RIPLEY-WAYNE COUNTIES
(Poplar Bluff 63901)

Barbour, Mrs. Marvin R., 1721 N. Main
Becker, Mrs. J. E., Route 1
Biggs, Mrs. Fred J., Jr., 808 N. Main
Caldwell, Mrs. Fred, 1705 Seifert Dr.
Dinelli, Mrs. Frank E., 427 N. Main
Engelhardt, Mrs. Robert C., 1513 Rosedale La.
Gernstetter, Mrs. S. L., 709 Kinzer
Hansbrough, Mrs. Eugene T., 1111 Fairmount
Kneibert, Mrs. F. L., Barron Rd.
Markel, Mrs. A. D., Jackson Rd.
McLain, Mrs. B. M., 724 Cynthia
Miller, Mrs. David V., Highway 67 S.
Parker, Mrs. Arthur C., Jr., 708 Selma
Post, Mrs. Cyril A., 960 Cynthia
Robertson, Mrs. William D., 900 North
Ruff, Mrs. T. Eugene, 1411 Rosedale
Tapp, Mrs. Ernest M., 1401 Lurlyn Rd.
Tenpenny, Mrs. J. W., 804 Oak Hill Rd.
Tosh, Mrs. John W., 812 Oak Hill Rd.
Tuma, Mrs. A. T., 1601 Big Bend Rd.
Turner, Mrs. James H., Route 1
Turner, Mrs. William F., 1308 Nooney
Wright, Mrs. John, Lurlyn Dr.

CALLAWAY COUNTY
(Fulton 65251)

Brown, Mrs. John J., 1304 N. Vine
Cremer, Mrs. William J., State Hospital Dr.
Durst, Mrs. Henry, 1 Ivy La.
Groce, Mrs. George, 1 Bartley La.
Hill, Mrs. James E., Washington
Jackson, Mrs. Vernon, State Hospital Dr.
Kepler, Mrs. Earl C., 109 Reed
Osbourn, Mrs. Richard A., 503 Douglas Blvd.
Peterson, Mrs. Donald, Route 1
Ritterbusch, Mrs. James K., 2 Bartley La.
Robertson, Mrs. Robert C., State Hospital Dr.
Schuetz, Mrs. Alfred, 2 W. Reed
Sydow, Mrs. Henry, 1014 Chippewa
Tellez, Mrs. Edward, Lynn Ave.
Tuttle, Mrs. Jay F., 4 Reed St.
Wood, Mrs. George F., 1700 Plaza Dr.

CAPE GIRARDEAU COUNTY
(Cape Girardeau 63701)

Alyea, Mrs. James, 1869 Drury La.
Ashley, Mrs. Hugh V., St., 444 Marie
Ashley, Mrs. Hugh V., Jr., 1201 Perry
Bahn, Mrs. Charles, 2418 Brookwood
Barnes, Mrs. Seth S., 1854 Broadway
Blankenship, Mrs. Dale, 907 W. Cape Rock Dr.
Burford, Mrs. Edwin K., 1010 Merriwether
Campbell, Mrs. Edward, 1100 N. Henderson
Chapman, Mrs. Jean Allen, 1150 N. Henderson
Cochran, Mrs. Jo Robert, 2452 Brookwood
Cook, Mrs. Norman, 1611 Lacey
Crowe, Mrs. John, 1000 N. Henderson
Estes, Mrs. Albert, Highway 61
Hall, Mrs. Frank, Sylvan La.
Herbert, Mrs. Charles, Sylvan La.
Holcomb, Mrs. John K., 825 N. Fountain
Hoxworth, Mrs. Gerald, Oxford Dr.
Jaeger, Mrs. Joseph, Shady La., Jackson 63755
Johnson, Mrs. Earl Wayne, 1044 N. Henderson
Jung, Mrs. Marshall, Illmo 63754
Kasten, Mrs. Melvin C., 1209 Sailor Circle
Keim, Mrs. J. Harry, 643 N. West End Blvd.
Kinder, Mrs. James, 348 N. Park
Kratz, Mrs. Paul, 1720 Cecilia
Lovinggood, Mrs. Thomas, Sylvan La.
McDonald, Mrs. Eugene, 225 W. Main, Jackson 63755
McGinty, Mrs. Charles, 2435 Brookwood
Magaletta, Mrs. George, 957 Rodney Dr.
Nunnelly, Mrs. Gordon, 1432 Themis
Nussbaum, Mrs. Paul, 209 Sunset Blvd.
Oehler, Mrs. William, 1617 Themis
Otto, Mrs. Thomas, 511 Alta Vista
Parsons, Mrs. Leroy, 2021 Sherwood
Rapp, Mrs. Harold, 1011 N. Henderson
Rawlins, Mrs. Fred, 1651 Bertling
Reynolds, Mrs. Garland, 537 Alta Vista
Ridings, Mrs. Harold, 96 E. Cape Rock Dr.
Ritter, Mrs. Raymond, 1257 Rockwood
Seabaugh, Mrs. D. I. L., 922 W. Main St., Jackson 63755
Seabaugh, Mrs. Loy, 334 N. Ellis
Seabaugh, Mrs. William, Route 2, Box 563
Shoss, Mrs. Milton, W. Cape Rock Dr.
Sparkman, Mrs. Thomas, 1629 Oxford Dr.
Stewart, Mrs. Wendell K., 2412 Lynnwood
Terry, Mrs. James W., 1413 Margaret
Tribble, Mrs. Robert, 1920 Perryville Rd.
Tygett, Mrs. Glenn, 834 Alta Vista
Tygett, Mrs. Joseph, 1877 Oak Hills Dr.
Weeks, Mrs. George, 1728 Bessie
Williams, Mrs. W. A., Jr., 1236 Normal
Wilson, Mrs. Charles, Oak Lei Dr.
Wolff, Mrs. Paul, 90 E. Cape Rock Dr.

CLAY COUNTY
(Kansas City)

Adams, Mrs. Howard, 819 Nashua Rd., Rt. 1, Box 35 B, Liberty 64068
Bates, Mrs. G. Comer, 102 E. 43rd St., N. 64116
Boone, Mrs. Daniel, 5800 N. Grand 64118
Bowles, Mrs. Richard, 1950 Kings Highway, Liberty 64068
Burke, Mrs. E. K., 1 E. Briarcliff 64116
Chastain, Mrs. Maurice W., 3 E. 47th St., N. 64116
Chiles, Mrs. David R., Smithville 64089
Dunham, Mrs. R. H., Route 29 64118
Dwyer, Mrs. R. D., 1000 S. Woodland Dr. 64118
Edwards, Mrs. Theodore F., 2205 E. 39th St., N. 64116
Fakhoury, Mrs. Donald A., 4332 N. Central 64116
Fischer, Mrs. Edward H., 4000 Indianola Dr. 64116
Fowler, Mrs. I. Charles, 700 E. Barnes Ave. 64118
Gauer, Mrs. Robert J., 4916 N. Sherwood Dr. 64119
Hall, Mrs. James W., 4606 N. Cleveland 64117
Hayes, Mrs. Lawrence L., 1508 E. 51st St. N. 64118
Hedges, Mrs. Richard C., 530 Elms Blvd., Excelsior Springs 64024
Hendren, Mrs. Glen W., 516 W. Franklin, Liberty 64068
Hobbs, Mrs. Earl B., Smithville 64089
Hodge, Mrs. Robert H., 2214 E. 39th St., N. 64116
King, Mrs. Phillip, 1200 Middlebrook Dr., Liberty 64068
Kuenzi, Mrs. Donald E., 924 S. Woodland Dr. 64118
Langhus, Mrs. Melvin O., 104 W. Englewood Rd. 64118
McCormick, Mrs. James E., 309 Northcrest Dr. 64116
McCracken, Mrs. S. R., 810 Old Orchard, Excelsior Springs 64024
Mullins, Mrs. B. L., Route 29 64118
Musgrave, Mrs. David E., 420 N. Kimball, Excelsior Springs 64024
Parker, Mrs. Robert H., 112 E. 43rd St. N. 64116
Pileggi, Mrs. Felix A., 307 West 55th Terr. N. 64118
Revare, Mrs. Paul, 3245 Chippewa Dr. 64116
Roberts, Mrs. L. Marvin, 3906 E. 50th St. N. 64119
Robinson, Mrs. Van M., 413 West 43rd Terr. N. 64116
Schertz, Mrs. Truman B., 416 Sagamore La. 64116
Slaughter, Mrs. Carl, 6601 N. W. Hamer Dr.
Spelman, Mrs. Arch E., Bridge St., Smithville 64089
Sportsman, Mrs. Weldon L., 6309 N. Grand 64118
Werner, Mrs. Dean F., 4609 N. Main 64116
Werner, Mrs. Franklin C., 422 Sagamore La. 64116
Williams, Mrs. John M., 616 Ridgeway Dr., Liberty 64068
Willoughby, Mrs. James W., 420 N. Ridge, Liberty 64068
Withrow, Mrs. John B., 3925 N. Main 64116

COLE COUNTY
(Jefferson City 65101)

Adams, Mrs. Charles F., 26 Hobbs La.
Belinson, Mrs. Louis, 2008 Redwood Dr.
Bowe, Mrs. Edwin E., 401 Ridgeway
Bregant, Mrs. Robert, 1017 Laurel
Cox, Mrs. William A., 206 Swift's Hwy.
Dorris, Mrs. Richard P., 1104 Vineyard Sq.
Doyle, Mrs. Matthew J., 2311 Livingston
Enloe, Mrs. L. David, 1200 Moreland
Exon, Mrs. C. Stuart, Boonville Rd.
Fullgrabe, Mrs. Emil A., 1602 Taylor
Garner, Mrs. Lynn M., 403 Meier Dr.
Gordon, Mrs. James, 600 Boonville Rd.
Gove, Mrs. Herman S., 712 Broadway
Guhleman, Mrs. Henry V., Jr., 1710 Greenberry Rd.
Gurnee, Mrs. Landon H., 121 Westmore
Handler, Mrs. Fred P., 614 Boonville Rd.
Kanagawa, Mrs. Harold Hajime, 734 Houchin
Kelly, Mrs. Marshall W., 1610 Greenberry Rd.
Klebba, Mrs. Larry B., Highway 50 West
Leslie, Mrs. James P., 933 Fairmount
Leslie, Mrs. James T., Jr., 1552 Brookside Blvd.
Loyd, Mrs. Earl L., 114 Binder Dr.
McHaney, Mrs. John W., Highway 50 W.
McKnelly, Mrs. William V., 1204 Lee
Matthews, Mrs. John I., 1310 Moreau Dr.
Meier, Mrs. Francis X., 1913 Hayselton Dr.
Meinershagen, Mrs. Charles W., 138 Forest Hill
Melia, Mrs. Bernard, 1507 Moreland
Ossman, Mrs. Julian A., 2505 W. Main
Ringo, Mrs. Henry, Centertown
Russell, Mrs. Joseph P., 1517 Greenberry Rd.
Sanders, Mrs. Jack Shelby, 2008 Livingston Dr.
Sennott, Mrs. John Stephen, 102 Douglas Dr.
Shull, Mrs. G. Donald, 1925 Hayselton Dr.
Stauffer, Mrs. Harry Beach, 1906 Chicago Rd.
Stephan, Mrs. August P., 90 W. Circle Dr.
Strieker, Mrs. Harold C., 1205 Moreau Dr.
Sugarbaker, Mrs. Everett D., 2113 W. Main
Summers, Mrs. Joseph S., Jr., 2313 W. Main
Tanner, Mrs. Robert H., 1606 Greenberry Rd.
Taylor, Mrs. Leon A., 1104 W. Main
Tietjen, Mrs. Fred C., 7 Greentree Rd.
Watts, Mrs. Byron Edward, 2112 Forest Dr.
Winegar, Mrs. Alvon C., 222 Swift's Hwy.

COOPER COUNTY
(Boonville 65233)

Abele, Mrs. William Arved, Krohn Dr.
Avery, Mrs. Willard Bartlett, 20 Crestview
Beckett, Mrs. Theodore Cooper, 725 4th St.
Diekroeger, Mrs. Manuel Louis, Maplewood Farms, Rd. 1
Draper, Mrs. Bernard Lee, 8 Boler Dr.
Draper, Mrs. Gary Allen, 1117 Jefferson Rd.
Hata, Mrs. Daikichi, 7 Morningside Dr.
Humphreys, Mrs. Edward Tristran, 1123 3rd St.
Stuart, Mrs. Byron McClellan, 910 Shamrock Terr.
Winn, Mrs. George Warren, 607 Poplar St.
Ziegler, Mrs. William Henry, Weyland Dr.

DUNKLIN COUNTY
(Kennett 63857)

Baldwin, Mrs. Paul, 200 W. Washington
Benson, Mrs. Leo J. J., 204 Wiggs

Cash, Mrs. Charles R., 800 College
Cofer, Mrs. J. C., 404 N. Walnut
Croom, Mrs. D. W., 411 W. Park, Malden 63863
Dunmire, Mrs. George Q., 504 S. Baker Dr.
Joffe, Mrs. Edwin, Paragould, Ark. 72450
Miltenberger, Mrs. Paul C., 705 W. Washington
Morehead, Mrs. William Edward, Malden 63863
Palenske, Mrs. R. L., Box 57, Hornersville 63855
Peck, Mrs. Chester Roehl, 234 S. Main
Presnell, Mrs. U. A. V., 915 S. Jackson
Spence, Mrs. E. L., 301 College
Swafford, Mrs. O. J., Main, Senath 63876
Tarver, Mrs. Quinton, 1004 W. Washington
Wilson, Mrs. Loys C., 915 S. Jackson
Zimmerman, Mrs. Joe A., 906 W. Washington

FRANKLIN-GASCONADE-WARREN COUNTIES

Bonney, Mrs. Sam, Washington 63090
Bozzo, Mrs. Raymond J., 408 W. Second St., Washington 63090
Brenner, Mrs. Paul A., 108 W. Washington Ave., Owensville
Denny, Mrs. H. M., Union
Eisenmann, Mrs. B. P., New Haven
Evermann, Mrs. Walter, Warrenton
Giem, Mrs. R. N., Sullivan
Hoelscher, Mrs. H. F., Hickory Haven, Warrenton
Moellenhoff, Mrs. Robert, James St., Washington, Mo. 63090
Muench, Mrs. Ludwig O., 1530 Riverview Dr., Washington 63090
Murney, Mrs. J. A., 700 S. Stafford, Washington 63090
Richardson, Mrs. G. A., Union
Richardson, Mrs. W. R., Box 228, Union
Ryan, Mrs. J. B., Cedar St., Washington 63090
Schmidt, Mrs. Charles A., Gerald
Shaw, Mrs. Carvel T., 1008 Washington, Hermann
Shea, Mrs. John G., 305 West Jackson Ave., Owensville 65066
Strehlman, Mrs. B. G., 510 West End Ave., Union
Workman, Mrs. G. M., Hermann

GRAND RIVER COUNTIES
(Caldwell-Carroll-Livingston-Grundy-Daviess-Harrison-Linn-Mercer-DeKalb Counties)

Allen, Mrs. E. Warren, 1202 N. Jefferson, Carrollton 64633
Bales, Mrs. Eugene, 502 W. 3rd Terr., Carrollton 64633
Bohnsack, Mrs. Ralph, 1017 Brookfield, Brookfield 64628
Broyles, Mrs. T. Watkins, Bethany 64424
Clark, Mrs. Chester, 13 Town & Country, Trenton 64683
Conrad, Mrs. Joseph, 1202 Jackson, Chillicothe 64601
Cross, Mrs. Albert, 902 W. 17th, Trenton 64683
Cullers, Mrs. Charles, 205 W. 12th, Trenton 64683
Daley, Mrs. Frank, 508 E. Sammuel, Hamilton 64644
Dixon, Mrs. John, 1005 Brookfield, Brookfield 64628
Dowell, Mrs. Donald, 1830 Calhoun, Chillicothe 64601
Ellsworth, Mrs. Willard, Cainsville 64632
Fair, Mrs. William, 1705 Calhoun, Chillicothe 64601
Fuson, Mrs. William, 520 Pleasant View, Trenton 64683
Gale, Mrs. Joseph, 1710 Polk, Chillicothe 64601
Gary, Mrs. George, 112 W. Houser, Marceline 64658
Gearhart, Mrs. Merriam, 2100 Beekman, Bethany 64424
Horner, Mrs. Glennon, W. Walker, Marceline 64658
Howell, Mrs. Billy, 157 Hunt, Brookfield 64628
Magill, Mrs. Joseph, 523 Baker Ave., Milan 63556
Mairs (Edgar), Miss Catherine, 412 E. 7th, Trenton 64683
Mandler, Mrs. George, 1616 Clay, Chillicothe 64601
Platz, Mrs. John, 804 N. Main, Carrollton 64633
Shiflet, Mrs. Albert W., Wheeling 64688
Smith, Mrs. Robert, 509 E. Houser, Marceline 64658
Todd, Mrs. Paul C., Carrollton 64633
Sweiger, Mrs. James, Maysville 64469
Vandiver, Mrs. V. D., 1836 Polk, Chillicothe 64601
Vinyard, Mrs. Jack, RFD, Carrollton 64633

GREENE COUNTY
(Springfield)

Allen, Mrs. Jerry H., 1324 S. Fairway Terr. 65804
Anthony, Mrs. Dallas D., 1322 S. Pickwick 65804
Ash, Mrs. Charles J., 743 Riverside 65804
Ashley, Mrs. Thomas E., 2740 Pythian 65802
Atkinson, Mrs. Thomas E., Route 9, Box 81A 65804
Auner, Mrs. Cecil R., 649 McCann 65804
Baldwin, Mrs. Richard M., 2033 Prairie La. 65804
Baries, Mrs. Robert, 408 N. Locust, Marshfield 65706
Barr, Mrs. Richard, 1939 E. Wayland
Blades, Mrs. Ross, 2845 E. University
Bonebrake, Mrs. McDonald D., 1443 S. Delaware 65806
Broaddus, Mrs. Loren, 1333 East Elm St.
Brown, Mrs. Lyman, 1410 N. Rogers 65802
Burkey, Mrs. Jordon W., 2405 Sheridan 65804
Busiek, Mrs. Paul F., Route 9 65804
Busiek, Mrs. Urban J., 1635 E. Walnut 65802
Callaway, Mrs. Guy, Jr., 901 E. Portland 65804
Cheek, Mrs. Anne C., 1535 E. Meadowmere 65804
Christy, Mrs. Raymond A., 2868 Eastmoor 65804
Ciccone, Mrs. Pasquale, U. S. Medical Center 65802
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Clary, Mrs. William W., 2259 Mirabeau 65804
Clawson, Mrs. James W., 2257 Rosebrier 65804
Clayton, Mrs. Edgar L., 2446 Brentwood 65804
Cochran, Mrs. Thomas E., 2423 Brentwood 65804
Coller, Mrs. Frederick B., 2433 Marlan 65804
Crawford, Mrs. Oral B., Route 1, Box 443 65803
Delzell, Mrs. William A., Route 1, Willard 65781
Dietz, Mrs. M. Wendell, 2540 Edgewater 65804
Dillard, Mrs. Erin M., 2530 S. Marlin 65804
Dolan, Mrs. Daniel L., 2300 Maryland 65804
Duncan, Mrs. Robert D., 1234 E. Loren 65804
Eastwood, Mrs. Robert A., 3043 Wilshire 65804
Elkins, Mrs. Ronald F., 2830 E. Glenwood 65804
Ellis, Mrs. Francis J., 2235 E. Glenwood 65804
Evans, Mrs. Ezra L., 1260 E. Catalpa 65804
Farthing, Mrs. F. R., 1234 E. Walnut 65802
Farthing, Mrs. Gene W., 1235 E. Walnut 65802
Ferguson, Mrs. John P., 1219 S. Clay 65804
Ferguson, Mrs. Mary V., 1219 S. Clay 65804
Ferrell, Mrs. Thomas E., 1525 E. Meadowmere 65804
Fessenden, Mrs. Ersel M., 634 E. Kingsbury 65804
Fitch, Mrs. Max, 2523 S. Marlan 65804
Francis, Mrs. William C., 2820 E. Glenwood 65804
German, Mrs. Walter A., Jr., 2659 Luster 65804
Giddings, Mrs. Frank C., 1211 S. Pickwick 65804
Glynn, Mrs. Robert R., 1101 Benton
Gorelick, Mrs. David F., 1041 Linwood Terr. 65804
Gose, Mrs. Don F., 1339 S. Delaware 65804
Griot, Mrs. Mary J., 1640 E. Sunshine 65804
Hahn, Mrs. Andrew L., 2639 S. Luster 65804
Hall, Mrs. David W., 2122 Wayland Dr. 65804
Hall, Mrs. Durward G., 2442 E. Fremont 65804
Hanan, Mrs. Ernest B., 724 E. Kingsbury 65804
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H'Doubler, Mrs. Alice, Route 7, Box 207 65802
H'Doubler, Mrs. Charles E., 1421 Bedford Rd. 65804
H'Doubler. Mrs. F. T., Jr., 2336 E. Glenwood 65804
H'Doubler, Mrs. Peter B., 1137 S. Pickwick 65804
Holland, Mrs. Robert, 2623 S. Luster 65804
Hollis, Mrs. Richard, 2178 Catalina 65804
Holmes, Mrs. Daniel E., 2115 S. Cedarbrook 65804
Holmes, Mrs. David R., 2321 S. Cedarbrook 65804
Horton, Mrs. James D., 1235 E. Delmar 65804
Hulstra, Mrs. Han F. W., 2652 S. Luster 65804
Jameson, Mrs. James E., 1210 S. Weller 65804
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Johnson, Mrs. Warford B., 2244 Edgewood 65804
Johnson, Mrs. William F., 973 E. Linwood Dr. 65804
Johnston, Mrs. Joseph L., 2855 Southern Hills 65804
Jorel, Mrs. Louis E., 1822 S. National 65804
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Klingner, Mrs. George M., Turners 65765
Klingner, Mrs. George M., Jr., 1844 Valley Rd. 65804
Knabb, Mrs. Henry F., Route 12 65804
Knabb, Mrs. Kenneth E., 1229 E. Catalpa 65804
Kolze, Mrs. Vernon W., 1854 Valley Rd. 65804
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Lemmon, Mrs. G. Bruce, 1462 Virginia 65804
Lewis, Mrs. Noel Rex, 2205 Glendale 65804
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Lockhart, Mrs. Charles E., 1600 E. Catalpa 65804
Lorenc, Mrs. Ernest, 2454 Luster 65804
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Maple, Mrs. Francis M., 2115 E. Edgewood 65804
Maples, Mrs. Floyd H., 1923 Ventura 65804
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McCraw, Mrs. Doyle C., Bolivar 65613
McKinsey, Mrs. John J., 2517 S. Weaver 65802
Menchetti, Mrs. Don, 2049 Roanoke
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Napper, Mrs. Marvin L., Route 1, Ash Grove 65604
Neu, Mrs. Leo T., 3008 Carlisle Circle 65804
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Silsby, Mrs. Harry D., 1369 S. Fairway 65804
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Snead, Mrs. William H., 2532 Sheridan 65804
Stewart, Mrs. Robert B., 2360 E. Grand 65804
Stufflebaum, Mrs. Robert E., 2248 Mirabeau 65804
Sturtevant, Mrs. Harwood N., 956 S. Fremont 65804
Thomasson, Mrs. David D., 2311 E. Glenwood 65804
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Tombridge, Mrs. T. L., 2019 Holly Circle 65804
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Waterfield, Mrs. Jim R., 2565 Sheridan Blvd. 65804
Williams, Mrs. John Westerfield, 2245 Fritts La.
Wilson, Mrs. Roy E., 2160 Barataria 65804
Wise, Mrs. Gordon F., 2850 Southern Hills 65804
Wittmer, Mrs. Samuel C., 2314 E. Washita 65804
Wood, Mrs. William W., Route 2, Box 101 65804
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Anderson, Mrs. Raymond B., 6024 State Line 64113
Anderson, Mrs. Richard W., 1001 Romany Rd. 64113
Andrus, Mrs. Bailey C., 6508 Overbrook Rd., Shawnee Mission, Kan. 66208
Arms, Mrs. Arnold V., 6421 High Dr., Shawnee Mission, Kan. 66208
Aschmann, Mrs. T. H., 8740 Brooklyn 64130
Asher, Mrs. A. Graham, 5410 State Line Rd., Shawnee Mission, Kan. 66208
Atcheson, Mrs. Bellfield, 6524 Overhill Rd., Shawnee Mission, Kan. 66208
Atwell, Mrs. Floyd C., 630 W. 60th Terr. 64113
Averill, Mrs. Keith H., 9616 Riggs, Overland Park, Kan. 66204
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Baer, Mrs. Alvin J., 5800 Howe Dr., Shawnee Mission, Kan. 66205
Baker, Mrs. Philip J., 11440 E. 47th St., 64133
Ballard, Mrs. V. Bryce, 6618 Rainbow, Shawnee Mission, Kan. 66208
Bare, Mrs. Chester I., 10501 E. 78th Terr. 64133
Barelli, Mrs. Pat A., 5609 Mission Dr., Shawnee Mission, Kan. 66208
Barloom, Mrs. James H., 612 E. 66th
Barnard, Mrs. John L., 444 W. 67th St. 64113
Barnes, Mrs. Robert H., 6714 Kenwood Ave. 64131
Barnett, Mrs. Gordon P., 6568 High Dr., Shawnee Mission, Kan. 66208
Barry, Mrs. John W., 5510 W. 84th St., Overland Park, Kan. 66204
Barry, Mrs. William B., 4600 Nichols Parkway 64112
Bass, Mrs. Walter R., 7202 Manchester Ave. 64133
Bay, Mrs. Merrill R., Woods Chapel Rd., Blue Springs 64015
Becker, Mrs. Rolfe A., 5808 W. 94th Terr., Overland Park, Kan. 66204
Becker, Mrs. R. R., 5622 Holmes St. 64110
Bennett, Mrs. J. D., 3216 W. 69th St., Shawnee Mission, Kan. 66208
Benoit, Mrs. Hector W., Jr., 2501 W. 64th St., Shawnee Mission, Kan. 66208
Berenson, Mrs. Sheldon E., 832 W. 63rd St. 64113
Bernreiter, Mrs. Michael, 1246 W. 63rd St. 64113
Berry, Mrs. G. Neill, 5650 High Dr., Shawnee Mission, Kan.
Berry, Mrs. Maxwell G., 5020 Summit 64112
Bikales, Mrs. Victor W., 5810 High Dr., Prairie Village, Kan. 66208
Bills, Mrs. Marvin L., 3309 W. 68th St., Shawnee Mission, Kan. 66208
Black, Mrs. Don A., 2700 W. 67th, Prairie Village, Kan. 66208
Black, Mrs. Eugene C., 3201 W. 67th St., Shawnee Mission, Kan. 66208
Blim, Mrs. Richard Don, 2209 W. 68th, Shawnee Mission, Kan. 66208
Bohan, Mrs. Peter T., 4545 Wornall Rd., 64111
Bordy, Mrs. Marvin D., 8710 Belleview 64114
Borenstein, Mrs. Joseph, 7307 Holmes St. 64131
Botwin, Mrs. Arnold E., 6010 Cherokee Dr., Shawnee Mission, Kan. 66205
Boughnou, Mrs. Harvey, 660 W. 61st Terr. 64113
Bourke, Mrs. Timothy S., 601 E. Meyer Blvd. 64131
Bowser, Mrs. John F., 3701 Madison 64111
Brams, Mrs. Jack B., 5050 Oak 64112
Braverman, Mrs. Abe Elliott, 2701 W. 68th, Shawnee Mission, Kan.
Bridgens, Mrs. James G., 1025 Huntington Rd. 64113
Brown, Mrs. Adrian J., 12 E. 63rd St. 64113
Brown, Mrs. William R., 8124 Lee Blvd., Shawnee Mission, Kan. 66206
Brumm, Mrs. L. W., 7421 Wyoming
Bruner, Mrs. Robert E., 912 Valentine Rd. 64111
Brust, Mrs. Carl H., 6114 Howe Dr., Shawnee Mission, Kan. 66205
Buckner, Mrs. Robert C., 3507 W. 87th St., Leawood, Kan. 66206
Budke, Mrs. Harold A., 1219 W. 66th Terr. 64113
Buhler, Mrs. Victor B., 5212 Bellview 64112
Buie, Mrs. Bruce R., 4601 E. 110th St. 64137
Bunting, Mrs. Williston P., 1231 W. 62nd 64113
Butcher, Mrs. Robert W., 1101 W. 86th Terr. 64114
Byers, Mrs. Philip, 5832 High Dr., Shawnee Mission, Kan. 66208
Caffrey, Mrs. Raymond J., 1314 W. Red Bridge Rd. 64114
Caldwell, Mrs. John K., 436 E. 65th Terr. 64113
Campbell, Mrs. Frederick B., 1032 W. 55th St. 64113
Campbell, Mrs. John G., 3509 W. 84th, Prairie Village, Kan.
Carlson, Mrs. Hjalmar E., 2025 W. 48th Terr., Shawnee Mission, Kan. 66205
Carmichael, Mrs. Francis A., 5841 High Dr., Shawnee Mission, Kan. 66208
Casady, Mrs. Gilbert N., 9830 Aberdeen Dr., Shawnee Mission, Kan. 66206
Casford, Mrs. Ralph, 1236 W. 72nd St. 64114
Chambers, Mrs. James Q., Jr., 5500 Belinder Rd., Shawnee Mission, Kan. 66206
Chambers, Mrs. James Q., Sr., 3701 Broadway 64111
Cheeseman, Mrs. William B., 5302 W. 79th Terr., Prairie Village, Kan. 66208
Clark, Mrs. Irving H., 2811 Blue Ridge Ext., Grandview 64030
Cochrane, Mrs. Joseph J., 9615 Grandview Rd. 64137
Cockerell, Mrs. Sanford F., 3501 S. Crysler, Independence 64050
Coffey, Mrs. Ralph R., 814 Rockwell La. 64112
Cohen, Mrs. Harry K., 417 W. 70th St. 64113
Cohen, Mrs. Hilliard, 1291 W. 72nd Terr. 64114
Colom, Mrs. George A., 4002 W. 56th, Shawnee Mission, Kan.
Connell, Mrs. Evan S., 837 W. 58th Terr. 64112
Cooper, Mrs. Charles S., 1035 W. Meyer Circle 64113
Cox, Mrs. Kenneth E., 5640 Pembroke La., Prairie Village, Kan. 66208
Crockett, Mrs. James, 5400 W. 83rd St., Prairie Village, Kan. 66208
Cross, Mrs. Walter M., 310 W. 49th 64112
Culbertson, Mrs. William F., 1253 Huntington Rd. 64113
Curran, Mrs. Desmond, 6626 Wenonga Terr., Prairie Village, Kan. 66208
Curts, Mrs. Calvin J., 7419 Terrace 64114
Dann, Mrs. David S., 1215 W. 67th St. 64113
Davis, Mrs. Herbert V., 4601 Holmes 64110
Davis, Mrs. Jack M., 7110 Harecliff Dr. 64133
Davis, Mrs. Robert C., 659 W. 61st Terr. 64113
Demotte, Mrs. John A., 1247 W. 56th St. 64113
Demott, Mrs. John D., 4402 Homestead Dr., Prairie Village, Kan. 66208
Dennie, Mrs. Charles C., 2600 Verona Rd., Shawnee Mission, Kan. 66208
Dewesse, Mrs. Everett R., 3316 W. 69th St., Shawnee Mission, Kan. 66208
Dixon, Mrs. V. L., 2501 West Paseo
Dlabal, Mrs. L. J., 3729 Blue Ridge Blvd., Independence, Mo. 64052
Doane, Mrs. William L., 1102 130th St., Grandview
Dodge, Mrs. Mark, 5820 State Line Rd., Shawnee Mission, Kan. 66208
Dolezal, Mrs. Joseph B., 7928 Outlook, Prairie Village, Kan. 66208
Dorsch, Mrs. E. H., 3516 Claremont, Independence, Mo. 64052
Downey, Mrs. James W., 2400 W. 51st Terr., Shawnee Mission, Kan. 66205
Drake, Mrs. Roy F., 6600 Outlook, Shawnee Mission, Kan. 66202
Draney, Mrs. Thomas L., 6415 Main St. 64113

Drisko, Mrs. Robert M., 2100 Stratford Rd., Shawnee Mission, Kan.
Duncan, Mrs. William H., Jr., 808 W. 69th St. 64113
Durnell, Mrs. Monaford D., 1011 W. 1st St., Lee's Summit 64063
Edmonds, Mrs. D. D., 9009 Mission Rd., Leawood, Kan. 66206
Eiseman, Mrs. Gustave, 7908 Campbell 64131
Elias, Mrs. David J., 10311 Sheley Rd., Independence, Mo. 64052
Elliott, Mrs. B. Landis, 4712 Roanoke Pkwy. 64112
Elliott, Mrs. R. Glen, 6136 Reinhardt Dr., Shawnee Mission, Kan. 66205
Engelmann, Mrs. Calvin E., 4916 West 57th Terr., Shawnee Mission, Kan.
Eshelman, Mrs. Albert D., 12116 E. 46th St. 64133
Etzenhouser, Mrs. Merrill, 1215 W. 35th Terr., Independence, Mo. 64050
Etzenhouser, Mrs. Russell D., 1317 W. College, Independence, Mo. 64050
Eubank, Mrs. Dillard M., 6020 Elm 64133
Eubank, Mrs. Will R., 6113 Lane 64133
Eubank, Mrs. William Y., 6411 Morningside Dr. 64113
Farley, Mrs. Claude C., 3312 W. 87th, Leawood, Kan.
Farney, Mrs. Jacob P., 2721 W. 69th St., Shawnee Mission, Kan. 66208
Farnsworth, Mrs. Jesse J., 5608 Fairway, Shawnee Mission, Kan. 66205
Feierabend, Mrs. Frank L., 7345 Wyoming 64114
Ferguson, Mrs. Eugene H., 333 W. Meyer Blvd., Apt. 504 64113
Ferguson, Mrs. James T., 718 E. Armour 64109
Ferris, Mrs. Carl R., 629 W. 70th Terr. 64113
Fitzgerald, Mrs. Robert H., 2700 W. 69th St., Shawnee Mission, Kan. 66208
Flanders, Mrs. Horace F., 3820 W. 65th Terr., Shawnee Mission, Kan. 66208
Flanders, Mrs. Virgil, 3304 W. 87th, Leawood, Kan.
Forman, Mrs. Louis H., 2801 W. 67th St., Shawnee Mission, Kan. 66208
Forsythe, Mrs. Robert W., 6457 Verona Rd., Shawnee Mission, Kan. 66208
Foster, Mrs. Hal, 5050 Oak St., Apt. 1028 64112
Fouts, Mrs. Dallas, Sr., 13101 E. 43rd St., Independence, Mo. 64050
Fowler, Mrs. Fred D., 1231 W. 56
Fowler, Mrs. James W., 200 W. 53rd Terr. 64112
Francisco, Mrs. Clarence B., 3621 Wyncote La., Shawnee Mission, Kan. 66205
Fredeen, Mrs. Robert C., 5437 Canterbury Rd., Shawnee Mission, Kan. 66205
Frick, Mrs. J. Paul, 116 Huntington Rd. 64113
Friedman, Mrs. Morris L., 2516 W. 69th St., Shawnee Mission, Kan. 66208
Fritzlen, Mrs. Thomas J., 6848 Locust 64131
Fuhrman, Mrs. Donald L., 3417 W. 68th St., Prairie Village, Kan. 66208
Fulton, Mrs. Albert E., 9501 Madison Ave. 64114
Fury, Mrs. Tex E., 642 Huntington Rd. 64113
Gainey, Mrs. Harold L., 4907 Sunset Dr. 64112
Ganley, Mrs. William Coyle, 8400 Overhill Dr. 64138
Gard, Mrs. Raymond F., 11530 Winner Rd., Independence, Mo. 64052
Garrison, Mrs. Roy F., 404 W. 67th Terr. 64113
Geha, Mrs. Braham J., 9814 Lee Blvd., Leawood, Kan. 66206
Gestring, Mrs. Hugh A., 3915 W. 90th Terr., Shawnee Mission, Kan. 66207
Gestring, Mrs. Hugh A., 3915 W. 90th Terr., Shawnee Mission, Kan. 66207
Gibson, Mrs. David M., 5318 Sunset Dr. 64112
Gilkey, Mrs. Harry M., 4941 Westwood Rd. 64112
Gillmor, Mrs. C. Stewart, 420 E. Armour 64109
Ginardi, Mrs. Donald E., 4615 Gennessee 64112
Ginsberg, Mrs. Norman A., 1220 W. 67th St. 64113
Gist, Mrs. W. W. 1208 W. 59th St. 64113
Goldman, Mrs. Stanley, 5734 Windsor Dr., Shawnee Mission, Kan. 66205
Goldsich, Mrs. Edward, 5515 W. 81st St., Prairie Village, Kan. 66208
Goldstein, Mrs. Marvin F., 400 E. 91st St. 64131
Goodman, Mrs. Leroy, 2119 W. 70th Terr., Shawnee Mission, Kan. 66208
Goodson, Mrs. W. H., Jr., 46 E. 54th St. 64112
Goolsbee, Mrs. Robert, 6438 Sagamore, Shawnee Mission, Kan. 66208
Gordon, Mrs. Morris P., 7617 Aberdeen, Shawnee Mission, Kan. 66208
Gottsch, Mrs. Joseph C., 7904 Granada, Prairie Village, Kan. 66208
Grabske, Mrs. Charles F., 1314 W. Truman Rd., Independence, Mo. 64050
Graham, Mrs. Wallace H., 5157 Ward Pkwy. 64112
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Green, Mrs. John Richard, 3143 Santa Fe Terr., Independence, Mo. 64052
Greene, Mrs. W. Wallace, 2008 W. 68th St., Shawnee Mission, Kan. 66208
Griffith, Mrs. George W., 4010 Harrison 64110
Griffith, Mrs. John A., Jr., 6500 Granada Dr., Shawnee Mission, Kan. 66208
Growdon, Mrs. John A., 1207 Stratford Rd. 64113
Gullett, Mrs. Charles C., 8815 West 72nd Terr., Shawnee Mission, Kan.
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Haight, Mrs. John M., 5609 Blue Ridge Blvd. 64133
Hall, Mrs. Thomas B., 4550 Warwick Blvd., Apt. 504 64111
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Hamel, Mrs. Herbert A., 6441 High Dr., Shawnee Mission, Kan. 66208
Hamill, Mrs. Robert W., 6945 Nieman Rd., Shawnee Mission, Kan. 66203
Harless, Mrs. Morris S., 6844 Cherry 64131
Hartwig, Mrs. Fred H., 5204 Pawnee Dr., Shawnee Mission, Kan. 66205
Hartwig, Mrs. Raymond W., 3110 Tomahawk, Shawnee Mission, Kan.
Hausheer, Mrs. Herman, 1804 S. Dodgion, Independence, Mo. 64050
Haynes, Mrs. Solon E., 5306 Holmes 64110
Heller, Mrs. B. Marcus, 627 W. 68th Terr. 64113
Helman, Mrs. Richard G., 6540 Wenonga Rd., Shawnee Mission, Kan. 66208
Henry, Mrs. S. David, Lake Quivira, Route 2, Kansas City, Kan. 66106
Herrman, Mrs. George V., 8331 Maple La., Overland Park, Kan. 66204
Hess, Mrs. Paul D., 8423 High Dr., Leawood, Kan. 66206
Hibbard, Mrs. Blaine Z., 5211 Sunset Dr. 64112
Hickerson, Mrs. William H., 4207 S. Crysler, Independence, Mo. 64050
Hill, Mrs. J. H., 8115 Meadow La., Leawood, Kan. 66206
Hink, Mrs. Fred W., 524 Hardy, Independence, Mo. 64053
Hoadley, Mrs. William D., 9625 Beverly, Shawnee Mission, Kan.
Hodgson, Mrs. Frank H., 1049 W. 55th 64112
Hoeper, Mrs. Samuel D., 13009 12th St., Grandview 64030
Hoffman, Mrs. J. S., 5820 Cherokee Dr., Shawnee Mission, Kan. 66205
Holbrook, Mrs. Ralph W., 700 W. 48th St. 64112
Hollweg, Mrs. Kenneth C., 808 W. Meyer Blvd. 64113
Holton, Mrs. Edward B., 2817 Westport Rd., Independence, Mo. 64052
Hook, Mrs. Waller G., 9238 State Line, Leawood, Kan. 66206
Howard, Mrs. Joseph W., 6026 McGee 64113
Hungate, Mrs. Carroll P., 6845 Oak 64113
Hunt, Mrs. Claude J., 615 W. 56th St. 64113
Hunt, Mrs. Thomas R., 5804 El Monte Dr., Shawnee Mission, Kan.
Hunter, Mrs. Martin P., 4100 W. 93rd, Shawnee Mission, Kan.
Hunzicker, Mrs. Warren J., 1248 Stratford Rd. 64113
Hustead, Mrs. Robert, 9510 Belinder Rd., Leawood, Kan. 66206
Ingham, Mrs. Walton C., 9723 Overbrook Rd., Leawood, Kan. 66206
Irwig, Mrs. Fred, 5109 W. 87th St., Shawnee Mission, Kan. 66207
Jackson, Mrs. Carl A., 2305 W. 79th St., Shawnee Mission, Kan. 66208
Jackson, Mrs. Jabez N., 2200 W. 50th Terr., Shawnee Mission, Kan.
Jacob, Mrs. Walter P., 1002 Romany Rd. 64113
Jacobs, Mrs. Morton, 6416 Verona Rd., Prairie Village, Kan. 66208
Jacobs, Mrs. Walter Harvey, 6656 Milhaven Dr., Shawnee Mission, Kan. 66202
James, Mrs. Otis E., Jr., 2810 W. 68th St., Shawnee Mission, Kan. 66208
Jansen, Mrs. Robert, 440 E. 66th St. 64113
Jarvis, Mrs. James A., 600 W. 57th St. 64113
Jenab, Mrs. Morteza, Route 2, Box 171, Blue Springs
Johnson, Mrs. James S., 2824 Benton Blvd.
Johnson, Mrs. Joseph E., 9915 Flora 64131
Johnstone, Mrs. Paul N., 117 W. 69th Terr. 64113
Jonas, Mrs. Harry S., 11711 Markham Rd., Independence, Mo. 64052
Jones, Mrs. T. Reid, 5927 Lockton La., Shawnee Mission, Kan. 66205
Justus, Mrs. John B., 5221 Howe Dr., Shawnee Mission, Kan. 66205
Kanarek, Mrs. Joseph, 6112 W. 87 Terr., Leawood, Kan. 66206
Kantor, Mrs. Julius M., 6708 High Dr., Shawnee Mission, Kan. 66208
Kantor, Mrs. Samuel, 3604 W. 87th St., Leawood, Kan. 66206
Katz, Mrs. Milton, 3535 W. 61st Terr., Mission, Kan.
Kaul, Mrs. Philip G., 5310 Mission Woods Rd., Shawnee Mission, Kan. 66205
Keeler, Mrs. James E., 651 W. 57th St. 64113
Kendall, Mrs. Charles A., 658 Red Rd., Independence, Mo. 64050
Kennard, Mrs. G. Keith, 3658 Madison 64111
Kent, Mrs. Bela, 5839 Cherokee Dr., Shawnee Mission, Kan. 66205
Ketcham, Mrs. William Merritt, 429 E. Meyer Blvd. 64131
Kettner, Mrs. Edward G., 6510 Milhaven Dr., Shawnee Mission, Kan. 66202
Kiene, Mrs. Richard H., 5835 High Dr., Shawnee Mission, Kan. 66208
Kimball, Mrs. Merritt H., 610 E. 36th 64109
King, Mrs. Tenbrook, 8228 Linden Dr., Prairie Village, Kan. 66208
Kitchen, Mrs. W. M., 1209 W. 58th St. 64113
Klein, Mrs. E. H., 7011 Roe, Prairie Village, Kan. 66208
Knight, Mrs. John S., 5800 High Dr., Shawnee Mission, Kan. 66208
Knight, Mrs. Lyle B., 108 Madison La., Lee's Summit 64063
Knoch, Mrs. H. Kermit 6606 Willow La., Shawnee Mission, Kan. 66208
Koehler, Mrs. Charles A., 2525 W. 89th, Shawnee Mission, Kan.
Korth, Mrs. William M., 6615 Overhill Rd., Shawnee Mission, Kan. 66208
Kranson, Mrs. Seymour J., 11 Hawthorne Pl., Independence, Mo. 64052
Kyger, Mrs. John E., 3612 Blue Ridge, Independence, Mo.
Lally, Mrs. James J., 800 W. 52nd Terr. 64112
Lamar, Mrs. Frederick C., 803 W. 48th St., Apt. 12 64112
Lamar, Mrs. Robert F., 800 W. 53rd Terr. 64112
Lambie, Mrs. Roger W., 9316 Reeder Dr., Overland Park, Kan. 66204
Landis, Mrs. George K., 10115 Pawnee La., Shawnee Mission, Kan.
Lapp, Mrs. Harry C., 632 W. 59th 64113
Latham, Mrs. Raymond W., 3008 W. 67th St., Shawnee Mission, Kan. 66208
Lauer, Mrs. Daniel J., 21 E. 67th St. 64113
Layton, Mrs. Ira C., 1025 Greenway Terr. 64113
Lee, Mrs. Henry A., 9821 Sagamore Rd., Leawood, Kan.
Leifer, Mrs. William W., 2001 W. 70th, Prairie Village, Kan. 66208
Leitch, Mrs. Cecil G., Route 2, Box 222, Blue Springs 64015

Leitz, Mrs. Frank B., 308 W. 116th
Lemoine, Mrs. Albert N., Sr., 9200 High Dr., Leawood, Kan. 66206
Leo, Mrs. William A., 4505 W. 66th St., Prairie Village, Kan. 66208
Lewis, Mrs. Revis C., 1001 W. 56th St. 64113
Lichtor, Mrs. Joseph M., 2109 W. 70th St., Prairie Village, Kan. 66208
Lieberman, Mrs. B. Albert, Jr., 424 W. 70th St. 64113
Liersch, Mrs. Josepha C., 815 E. Gregory Blvd. 64131
Lilly, Mrs. Terry E., Jr., 6515 Belinder, Shawnee Mission, Kan. 66208
Lindquist, Mrs. Carl N., 6437 Hodges Dr., Shawnee Mission, Kan. 66208
Link, Mrs. Vance E., 1201 W. 36th St., Independence, Mo. 64050
Lloyd, Mrs. Ivan E., 1816 Rankin Dr., Independence, Mo. 64050
Long, Mrs. R. Stacy, 3343 Blue Ridge Blvd., Independence, Mo. 64052
Lowell, Mrs. Paul, 4742 Liberty 64112
Lyddon, Mrs. Harold R., Jr., 1221 W. 67th St. 64113
Lytton, Mrs. George J., 3408 W. 79th St., Prairie Village, Kan. 66208
McCanse, Mrs. Andrew, 1232 W. 60th Terr. 64113
McCanse, Mrs. Raymond, 411 Ward Parkway 64112
McClanahan, Mrs. Robert C., 6456 Overbrook Rd., Shawnee Mission, Kan. 66208
McConchie, Mrs. James E., 2719 S. Crysler, Independence, Mo. 64052
McCoy, Mrs. Fred, 5720 Foster, Shawnee Mission, Kan. 66202
McCubbin, Mrs. C. Roy, 8612 Meadow La., Shawnee Mission, Kan.
McCunniff, Mrs. William B., 3719 Jarboe 64111
McDonnell, Mrs. John F., 5411 Central 64113
McFarland, Mrs. M. Donald, 5830 High Dr., Shawnee Mission, Kan. 66208
McGannon, Mrs. Paul T., 4806 Pawnee La., Shawnee Mission, Kan. 66205
McHale, Mrs. Thomas Cecil, 3003 W. 90th Terr., Leawood, Kan. 66206
McKee, Mrs. Joseph W., 9610 Overbrook Rd., Leawood, Kan.
McKee, Mrs. Wallace P., 2020 Stratford Rd., Shawnee Mission, Kan.
McLeod, Mrs. John, 9 E. 67th St. 64113
McMillan, Mrs. Thomas E., 3409 W. 68th St., Shawnee Mission, Kan. 66208
McPhee, Mrs. William R., 1205 W. 76th
McVay, Mrs. James R., Jr., 1233 W. 63rd Terr. 64113
Mangels, Mrs. Kenneth A., 1103 W. 36th Terr., Independence, Mo. 64050
Mantz, Mrs. Herbert L., 1209 Romany Rd. 64113
Marks, Mrs. Mark M., 6537 Summit 64113
Marshall, Mrs. C. F., 2500 W. 65th St., Shawnee Mission, Kan. 66208
Masucci, Mrs. Joseph M., 1012 West 96th Terr. 64114
May, Mrs. James W., 3501 W. 63rd St., Shawnee Mission, Kan. 66208
Mayer, Mrs. John H., Jr., 829 W. 55th St. 64113
Melgaard, Mrs. S. Ross, 1012 W. 61st Terr. 64113
Meyer, Mrs. Paul W., 5160 Sunset Dr. 64112
Meyers, Mrs. Harold L., 1901 Brookwood Rd., Shawnee Mission, Kan. 66208
Miles, Mrs. George O., 2231 W. 63rd St., Shawnee Mission, Kan. 66208
Miller, Mrs. Clint L., 211 Oxford Dr., Lee's Summit 64063
Miller, Mrs. Gerald L., 836 W. 51st St. 64112
Miller, Max I., 4001 W. 66th St., Prairie Village, Kan. 66208
Miller, Mrs. Wade H., 4550 Warwick Blvd., Apt. 508 64111
Miller, Mrs. Wilson Herrick, 6400 Verona Rd., Shawnee Mission, Kan. 66208
Mixson, Mrs. William C., 6501 Sagamore Rd., Shawnee Mission, Kan. 66208
Montello, Mrs. Samuel A., 4109 Delmar Dr., Prairie Village, Kan. 66208
Mooney, Mrs. Justin L., 5717 Windsor Rd., Shawnee Mission, Kan. 66205
Mooney, Mrs. Marcel L., 6439 Ensley La., Prairie Village, Kan. 66208
Morgan, Mrs. David B., 6513 Jefferson 64113
Morris, Mrs. Joseph H., 5017 George 64133
Morrow, Mrs. Raymond L., 17 W. 69th St. 64113
Moss, Mrs. Paul, 420 E. 64th Terr. 64113
Mosser, Mrs. Robert S., 3114 S. Norton, Independence, Mo. 64052
Mount, Mrs. Allan, Jr., 3518 Cottage, Independence, Mo.
Mueller, Mrs. M. J., 6441 Holmes 64131
Mullen, Mrs. Leo M., 4443 Paseo 64110
Murphy, Mrs. Edward S., 421 W. 68th St. 64113
Murphy, Mrs. James J., 10 Morningside Dr.
Murphy, Mrs. Robert J., 6428 High Dr., Shawnee Mission, Kan. 66208
Myers, Mrs. John S., 5401 W. 65th Pl., Shawnee Mission, Kan. 66202
Myers, Mrs. Robert M., 804 W. 65th 64113
Myers, Mrs. Wilson A., 425 Huntington Rd. 64113
Naime, Mrs. Mansour J., 5209 W. 79th St., Shawnee Mission, Kan. 66208
Needels, Mrs. Orval T., 207 W. 67th Terr. 64113
Nelson, Mrs. Bentley A., 6429 Willow La., Shawnee Mission, Kan. 66208
Nesselrode, Mrs. John H., 12000 Marbes Trail, Independence, Mo. 64052
Nickson, Mrs. Charles E., Jr., 4425 Larson 64133
Nigro, Mrs. E. Robert, 415 W. 55th 64113
Noltensmeyer, Mrs. Milton, 3305 W. 50th Terr., Shawnee Mission, Kan. 66205
Nunn, Mrs. P. M., 3418 Karnes Blvd. 64111
O'Hearne, Mrs. John J., 5529 High Dr., Shawnee Mission, Kan. 66208
O'Neil, Mrs. James H., 6729 Rockhill Rd. 64131
Overesch, Mrs. Harry B., 6215 Ensley La., Shawnee Mission, Kan. 66208
Ozar, Mrs. Milton, 1206 W. 62nd
Padfield, Mrs. Earl G., 1900 W. 61st Terr., Shawnee Mission, Kan. 66208
Pakula, Mrs. Sidney F., 5225 Charlotte 64110
Pallett, Mrs. Harold A., 4618 Warwick 64112
Parker, Mrs. Hubert M., 1200 W. Red Bridge Rd. 64114
Passman, Mrs. Harold, 416 E. 72nd Terr. 64131
Pearson, Mrs. Paul, 5820 Howe Dr., Shawnee Mission, Kan. 66205
Peete, Mrs. Don Carlos, 3717 Belleview 64111
Perll, Mrs. Maurice F., 830 W. 61st Terr. 64113
Perry, Mrs. Ralph, 7140 Sni-A-Bar Rd. 64129
Peterson, Mrs. Milton C., 3000 W. 67th St., Shawnee Mission, Kan. 66208
Petry, Mrs. E. L., 6520 Reeds Dr., Shawnee Mission, Kan. 66202
Pfeutze, Mrs. Edwin L., 5407 W. 100th Terr., Overland Park, Kan. 66204
Pinsker, Mrs. Oscar T., 6541 Granada Dr., Prairie Village, Kan. 66208
Piper, Mrs. Donald K., 9929 High Dr., Shawnee Mission, Kan.
Pipkin, Mrs. Garrett, 5427 Baltimore 64112
Pollock, Mrs. Leo H., 6601 Wenonga Terr., Shawnee Mission, Kan. 66208
Pope, Mrs. Charles H., Jr., 14401 E. 40th St., Independence, Mo. 64050
Porter, Mrs. Louis, 6017 McGee St. 64113
Potts, Mrs. Donald, 18508 E. 30th Terr., Independence, Mo. 64050
Powers, Mrs. John M., 3838 Blue Ridge Blvd., Independence, Mo. 64052
Preston, Mrs. Albert, Jr., 606 W. Meyer Blvd. 64113
Printz, Mrs. Joseph H., 820 W. 64th Terr. 64113
Pugh, Mrs. Richard George, 600 Dickinson Rd., Independence, Mo. 64050
Quer, Mrs. Erich A., 6820 Tomahawk Rd., Shawnee Mission, Kan. 66208
Quistgard, Mrs. Paul C., 7300 Manchester 64133
Raich, Mrs. Robert A., 828 Greenway Terr. 64113
Ramey, Mrs. Ehret O., 8108 Ward Pkwy. Plaza
Rector, Mrs. Joe Lee, Jr., 3915 W. 53rd St., Shawnee Mission, Kan. 66205
Reinhardt, Mrs. G. Robert, 600 E. 66th St. 64110
Rhoades, Mrs. Arthur, 110th & Antioch Rd., Box 292, Lenexa, Kan. 66051
Riller, Mrs. L. E., 3724 Holmes 64109
Rinkel, Mrs. Marie Thiessen, 6405 Sagamore Rd., Shawnee Mission, Kan. 66208
Roberts, Mrs. Harold M., 1005 Brentwood Circle 64112
Roberts, Mrs. Sam E., 5964 Overhill Rd., Shawnee Mission, Kan. 66208
Robinson, Mrs. Arthur W., 6600 Wenonga Rd., Shawnee Mission, Kan. 66208
Robinson, Mrs. Ernest Kip, 1015 W. 58th Terr. 64113
Robinson, Mrs. William J., 9931 Lee Circle, Shawnee Mission, Kan. 66206
Robison, Mrs. James Travis, Jr., 4203 W. 92nd Terr., Shawnee Mission, Kan. 66207
Rodgers, Mrs. George H., 10041 El Monte La., Overland Park, Kan.
Rubin, Mrs. Sidney, 1287 W. 72nd 64114
Rubnitz, Mrs. Leon H., 210 W. 94th St. 64114
Saferstein, Mrs. A. Lester, 6859 Cherry 64131
Sanders, Mrs. Clarence E., 4700 Roanoke Pkwy. 64112
Sanders, Mrs. Donald, 11721 Oak St.
Sanders, Mrs. William F., 1004 W. 66th Terr. 64113
Sauer, Mrs. Gordon C., 830 W. 58th Terr. 64113
Saunders, Mrs. Everett L., 3839 S. Crysler, Independence, Mo. 64050
Schaerrer, Mrs. W. C., 5245 Mercier 64112
Schiffmacher, Mrs. Jack E., 4517 W. 65th, Prairie Village, Kan. 66208
Schorer, Mrs. Edwin Henry, 221 W. 48th St. 64112
Schottman, Mrs. Gerhard W., Jr., 5902 W. 77th Terr., Prairie Village, Kan. 66208
Schutz, Mrs. Richard B., 3913 W. 57th Terr., Shawnee Mission, Kan. 66205
Seely, Mrs. Clark W., 3000 W. 68th St., Shawnee Mission, Kan. 66208
Shapiro, Mrs. L. M., 6429 Holmes 64131
Shechter, Mrs. Nathan, 5723 Windsor Dr., Shawnee Mission, Kan.
Shelden, Mrs. Russell D., 816 W. 58th Terr. 64113
Shifrin, Mrs. Alexander, 6824 Holmes 64131
Shireman, Mrs. Kenneth L., 55th Terr. & Noland Rd., Independence, Mo.
Shuey, Mrs. Herbert H., 933 E. 77th Terr. 64131
Shumate, Mrs. D. L., 3703 Penn 64111
Shypper, Mrs. M. J., 4738 Oak 64112
Sinclair, Mrs. Alexander B., 211 W. Concord Ave. 64112
Singleton, Mrs. J. Milton, 4618 Warwick Blvd. 64112
Skillman, Mrs. Robert K., 10335 High Dr., Shawnee Mission, Kan. 66206
Skinner, Mrs. John T., 824 Westover Rd. 64113
Slentz, Mrs. Edwin L., 4812 W. 66th Terr., Shawnee Mission, Kan. 66208
Slentz, Mrs. William A., 441 W. 59th Terr. 64113
Slickman, Mrs. Robert A., 4937 Wyoming 64112
Smith, Mrs. Arthur B., 10130 Pawnee La., Leawood, Kan. 66206
Smith, Mrs. Dale C., 6617 Wenonga Terr., Shawnee Mission, Kan.
Smith, Mrs. Ira T., 3900 W. 90th Terr., Shawnee Mission, Kan. 66207
Smith, Mrs. Wallace B., 3409 S. Leslie, Independence, Mo. 64050
Sneid, Mrs. Philip, 4201 W. 90th Terr., Overland Park, Kan. 66204
Snider, Mrs. Sam H., 722 Ward Parkway 64112
Snider, Mrs. W. Ray, 4416 S. Union, Independence, Mo. 64050
Spafford, Mrs. Allen L., 5552 Belinder Ave., Shawnee Mission, Kan. 66205
Spurny, Mrs. Otto M., 10 E. 8th Terr. 64113
Stacey, Mrs. Wallace R., 3407 Shady Bend Dr., Independence, Mo. 64052
Staggs, Mrs. William A., 641 E. 45th St. 64110
Staley, Mrs. Harry R., 5028 Sunset Dr. 64112
Statland, Mrs. Harry, 1016 W. 69th Terr. 64113
Statland, Mrs. Morris, 2911 W. 66th Terr., Shawnee Mission, Kan. 66208
Stelle, Mrs. Charles W., 4304 W. 82nd Terr., Shawnee Mission, Kan.
Stelmach, Mrs. W. Jack, 6100 Morningside Dr. 64113
Stockton, Mrs. Raymond W., 5215 W. 81st St., Prairie Village, Kan. 66208

Stockwell, Mrs. A. Lloyd, 5736 Windsor Dr., Shawnee Mission, Kan. 66205
Stratemeier, Mrs. Edward H., Jr., 9728 High Dr., Leawood, Kan. 66206
Stribling, Mrs. Thomas L., 5006 George St. 64133
Summers, Mrs. Caldwell B., 7312 Jarboe 64114
Sutton, Mrs. Richard L., Jr., 5400 Ward Parkway 64112
Swisher, Mrs. Robert C., 6034 Lockton La., Shawnee Mission, Kan. 66205
Szabados, Mrs. Ernest D., 1901 S. Leslie, Independence, Mo. 64050
Tarson, Mrs. Solomon S., 5511 W. 85, Overland Park, Kan.
Tasker, Mrs. Charles B., 2721 W. 67th Terr., Shawnee Mission, Kan. 66208
Teare, Mrs. Max, 11201 Walnut 64114
Terrill, Mrs. Robert S., 10223 Lee Blvd., Leawood, Kan. 66206
Thiele, Mrs. George H., 6526 High Dr., Shawnee Mission, Kan. 66208
Thomas, Mrs. Christopher Y., Jr., 4206 Homestead Dr., Prairie Village, Kan. 66208
Thompson, Mrs. Charles L., 1256 W. 61st Terr. 64113
Tice, Mrs. Wayne K., 1915 Lake Dr., Independence, Mo. 64050
Trippe, Mrs. Harrison C., 8511 Lee Blvd., Leawood, Kan. 66206
Trowbridge, Mrs. E. H., Jr., 6436 High Dr., Shawnee Mission, Kan. 66208
Tutera, Mrs. D. F., 1260 W. 63rd Terr. 64113
Twin, Mrs. Edward, 2921 W. 67th Terr., Shawnee Mission, Kan. 66208
Twyman, Mrs. Richard A., 1020 W. 56th St. 64113
Underwood, Mrs. Dick Holland, 2008 W. 95th St., Leawood, Kan. 66206
Underwood, Mrs. Harry A., 6516 Aberdeen, Shawnee Mission, Kan.
Underwood, Mrs. Ross H., 5522 Aberdeen Rd., Shawnee Mission, Kan. 66205
Unger, Mrs. Harold, 400 W. 68th St. 64113
Van Biber, Mrs. James T., 3705 Northern Blvd., Independence, Mo. 64052
Van Buskirk, Mrs. William C., 1909 W. 67th St. Shawnee Mission, Kan. 66208
Van Del, Mrs. Dwight T., 6737 Rockhill Rd. 64131
Vaughn, Mrs. James W., 5509 W. 86, Shawnee Mission, Kan. 66207
Vilmer, Mrs. Charles E., 6209 W. 65th, Shawnee Mission, Kan.
Vincent, Mrs. Jack C., 2003 W. 67th Terr., Shawnee Mission, Kan. 66208
Virden, Mrs. Herbert H., 6533 High Dr., Shawnee Mission, Kan. 66208
Voth, Mrs. Harold W., 5413 Neosho, Shawnee Mission, Kan. 66205
Wade, Mrs. Frederick E., 413 W. 62nd St. 64113
Wagner, Mrs. Paul J., 3146 W. 44th Terr., Kansas City, Kan.
Wakefield, Mrs. Franklin H., 8352 Overbrook Rd., Leawood, Kan. 66206
Walker, Mrs. James C., 609 E. 96th St. 64131
Walker, Mrs. John W., 9217 Pawnee, Shawnee Mission, Kan.
Walker, Mrs. Orville C., Jr., 604 Partridge, Independence, Mo. 64050
Wall, Mrs. Harry C., 6000 Howe Dr., Shawnee Mission, Kan. 66205
Wall, Mrs. Leonard A., 5011 Neosho Ave., Shawnee Mission, Kan. 66205
Ward, Mrs. Robert L., 3608 E. Shady Lane Dr. N. 64119
Webster, Mrs. Joseph G., 5532 Locust 64110
Weiford, Mrs. Edward C., 2009 W. 68th, Shawnee Mission, Kan. 66208
Welker, Mrs. Joseph E., 6441 Summit 64113
Wheeler, Mrs. Charles B., 820 W. 57th 64113
Wheeler, Mrs. John H., 5650 Mission Dr., Shawnee Mission, Kan. 66208
White, Mrs. Charles H., 6518 Overhill Rd., Prairie Village, Kan. 66208
White, Mrs. James S., 2812 Highland 64109
White, Mrs. Stoughton F., 6815 Cherokee La., Shawnee Mission, Kan. 66208
White, Mrs. William E., 613 W. 57th Terr. 64113
Whittaker, Mrs. Charles K., 627 E. 69th 64131
Whiteman, Mrs. John R., 9729 Cherokee La., Leawood, Kan. 66206
Whitman, Mrs. Doyle C., 6836 Cherokee La., Shawnee Mission, Kan. 66208
Whitmore, Mrs. J. Stewart, 1039 W. 58th St. 64113
Wilhelm, Mrs. Warren F., 3100 W. 67th St., Shawnee Mission, Kan. 66208
Wilkinson, Mrs. E. A., 6810 Linden La., Shawnee Mission, Kan.
Williams, Mrs. Delon Acree, 1252 Stratford Rd. 64113
Williams, Mrs. Joseph C., Jr., 2209 Arno Rd., Shawnee Mission, Kan.
Williams, Mrs. Roland Dean, 3635 Belleview 64111
Williams, Mrs. Vincent T., 4400 Blue Ridge Blvd. 64133
Willits, Mrs. Lyle G., 1224 W. 62nd St. 64113
Willoughby, Mrs. Jean B., 1019 W. 69th Terr. 64113
Wilson, Mrs. Brickhouse, 700 Ward Parkway 64112
Wilson, Mrs. Clifford C., 5531 Neosho La., Shawnee Mission, Kan. 66205
Winer, Mrs. Herbert J., 8136 Rosewood Dr., Prairie Village, Kan. 66208
Winston, Mrs. Bernard H., 1006 W. 67th St. 64113
Wise, Mrs. George W., 4610 Homestead Dr., Prairie Village, Kan. 66208
Wolf, Mrs. Jack, 6125 Morningside Dr. 64113
Woods, Mrs. S. Dwight, 9616 Buena Vista, Leawood, Kan.
Woodward, Mrs. William W., 3610 S. Delaware, Independence, Mo. 64050
Workman, Mrs. Charles E., 6609 Milhaven Dr., Shawnee Mission, Kan. 66202
Wortmann, Mrs. Robert F., 2819 W. 66th Terr., Shawnee Mission, Kan. 66208
Wright, Mrs. R. Paul, 4902 Belinder Rd., Shawnee Mission, Kan. 66206
Wurster, Mrs. W. Joel, 2015 Drury La., Shawnee Mission, Kan.
Youll, Mrs. Donald V., 4311 W. 71st St., Shawnee Mission, Kan.
Young, Mrs. James E., 2312 W. 98th, Leawood, Kan.
Young, Mrs. Paul R., 7424 Gregory Circle 64113
Zellermayer, Mrs. Jack, 5801 Lockton La., Shawnee Mission, Kan. 66205
Zoglin, Mrs. Nathan, 333 W. Meyer Blvd. 64113

JASPER COUNTY
(Joplin)

Allen, Mrs. David O., 505 W. 34th St. 64803
Barnett, Mrs. Norman H., Route 3, Box 181, Tabor Woods 64801
Birsner, Mrs. Frank, 1717 River St., Carthage 64836
Black, Mrs. Mervin H., 1001 W. Murphy Blvd. 64801
Burch, Mrs. John E., 1345 Crest Dr. 64801
Carnes, Mrs. Victor, 710 N. Sergeant 64803
Chase, Mrs. Ned B., 2901 Kentucky 64803
Chesney, Mrs. George W., 2416 E. 12th St. 64803
Cohle, Mrs Richard, 1609 Lilac La., Carthage 64836
Craig, Mrs. Irwin T., 2525 E. 12th St. 64803
Crawford, Mrs. A. L., 2931 Pearl Ave. 64801
Crispell, Mrs. Lawrence S., 911 Kensington 64801
Curl, Mrs. Howard, 2031½ Pearl 64803
Detar, Mrs. Burleigh, Sr., 410 Jackson 64801
Ferguson, Mrs. Lewis H., 3102 Minnesota 64803
Ferguson, Mrs. Ralph, 420 E. 33rd St. 64803
Fritsch, Mrs. Andrew J., 2920 Pearl 64801
Graves, Mrs. F. Burton, Route 4, Box 491 64803
Holtzman, Mrs. Samuel, 108 Sergeant 64801
Hornback, Mrs. Edward H., 2841 East 14th 64803
Isbell, Mrs. C. H., 1046 S. Garrison, Carthage 64836
Jeans, Mrs. Virgil, 629 Islington Pl. 64801
Kirschman, Mrs. Robert E., Route 4, Box 359 64803
Koehler, Mrs. John W., 3010 Wall 64801
McIntyre, Mrs. Emery, 1803 S. Maple, Carthage 64836
McNew, Mrs. W. T., 1204 S. Main, Carthage 64836
McPike, Mrs. Lloyd H., 3317 Oakridge Dr. 64803
Maddox, Mrs. John D., 1330 Crest Dr. 64801
Myers, Mrs. Roy E., 623 Sergeant 64801
Paddock, Mrs. Charles S., 1500 Range Line 64801
Papp, Mrs. Sandor D., 3343 Pearl 64801
Patterson, Mrs. Donald R., Route 1, Box 481 64801
Patterson, Mrs. Grover S., 1717 River, Carthage 64836
Pence, Mrs. F. Wendell, Route 2, Box 309, Carthage 64836
Post, Mrs. Winfred L., 2630 E. 15th St. 64803
Reid, Mrs. Charles T., 411 Jackson 64801
Schoeberl, Mrs. C. B., 3111 E. 4th St. 64801
Schulte, Mrs. Gregory A., 2515 E. 12th St. 64803
Scorse, Mrs. S. W., 619 W. 2nd St. 64801
Smith, Mrs. Roland T., 426 N. Pearl 64801
Smith, Mrs. Russell W., 315 Euclid, Carthage 64836
Stormont, Mrs. R. W., 28 S. Webb, Webb City 64870
Walker, Mrs. Paul, 1022 N. Sergeant 64801
Wetzel, Mrs. Fred S., 1503 S. Garrison, Carthage 64836
Wieman, Mrs. Harry K., 536 N. Wall 64801
Wood, Mrs. George H., 530 E. Highland, Carthage 64836
Wooldridge, Mrs. Bart F., 1435 Crest Dr. 64801
Young, Mrs. C. C., 2518 E. 15th St. 64803

JEFFERSON COUNTY

Allbee, Mrs. Roger, Crystal City 63019
Bolgar, Mrs. Bertalan, Festus 63028
Donnell, Mrs. Harold, DeSoto 63020
Donnell, Mrs. Hart, Crystal City 63019
Donnell, Mrs. Thomas, DeSoto 63020
Fallet, Mrs. Charles, DeSoto 63020
Judge, Mrs. Thomas, Crystal City 63019
Kozal, Mrs. Frank, Crystal City 63019
Mayfield, Mrs. Logan, Crystal City 63019
McKinstry, Mrs. Karl, DeSoto 63020
Rutledge, Mrs. John, Crystal City 63019
Senn, Mrs. Emmett, Herculaneum 63048

JOHNSON COUNTY
(Warrensburg 64093)

Cooper, Mrs. R. Lee, 411 W. Gay
Damron, Mrs. Oscar H., 612 N. Maguire
Folkner, Mrs. Albert L., 316 Hillcrest Dr.
Frein, Mrs. D. E., Leeton 64761
Gonzalez, Mrs. Mario Garza, 508 Jefferson
Harkness, Mrs. Harry H., Burkarth Rd.
Johnson, Mrs. Charles S., 821 S. Maguire
Jones, Mrs. Keith D., 919 E. Clark
Lederer, Mrs. Charles M., 617 Clark
Maxson, Mrs. T. Reed, Arilen Acres 64093

LAFAYETTE-RAY COUNTIES

Baker, Mrs. Donald, Odessa 64076
Best, Mrs. Robert, Higginsville 64037
Boydston, Mrs. Wayne, Odessa 64076
Brady, Mrs. Hugh, Concordia 64020
Brasher, Mrs. Ben H., Lexington 64067
Cook, Mrs. Edna, Richmond 64085
Cook, Mrs. Thomas B., Richmond 64085
Cope, Mrs. Joseph S., Lexington 64067
Crozier, Mrs. Frank, 323 S. Institute, Richmond 64085
Davault, Mrs. George, Richmond 64085
Fulkerson, Mrs. W. E., Higginsville 64037
Huber, Mrs. Herbert, Richmond 64085
Johnston, Mrs. Esther, Concordia 64020
Kelling, Mrs. Douglas, Waverly 64096
Kelling, Mrs. Jordan, Waverly 64096
Koppenbrink, Mrs. W. E., Jr., Higginsville 64037
Koppenbrink, Mrs. W. E., Sr., Higginsville 64037
LaHue, Mrs. William, Lexington 64067
Liston, Mrs. Odis, Oak Grove 64075
Martin, Mrs. W. E., Odessa 64076
McFadden, Mrs. Gene, Waverly 64096
Riley, Mrs. Charles, 314 N. Thornton, Richmond 64085
Ward, Mrs. Joe W., Lexington 64067
Williams, Mrs. John, Oak Grove 64075

LINCOLN-ST. CHARLES COUNTIES
(St. Charles 63301)

Barnette, Mrs. Eugene, 2626 West Adams
Canty, Mrs. Eugene, 1824 Sibley
Clever, Mrs. Henry, 1245 Cunningham
Commerford, Mrs. John, 302 S. Duchesne
Creech, Mrs. Joseph, Troy 63379
Crider, Mrs. Russell, 1875 South River Rd.
Damron, Mrs. Edward, 602 N. 5th, Elsberry
Duling, Mrs. Gerald, 304 Elmwood
DuMontier, Mrs. R. J., O'Fallon 63366
Fleming, Mrs. Robert, 700 Hawthorn
Gossow, Mrs. Geret, 1824 Watson
Goldkamp, Mrs. John, # 3 Blackberry
Hammes, Mrs. Roman, 505 Concordia
Hanlon, Mrs. Russell, 2616 Brookridge La.
Hardin, Mrs. Mabel J., 220 Madison
Hetlage, Mrs. Louis, # 5 Sunset Dr., Troy 63379
Keller, Mrs. Robert, 712 Parr, Wentzville 63385
Lensenmeyer, Mrs. Charles, 2804 Mayer Dr.
Muenster, Mrs. Vincent, # 3 Briarwood
Poggemeier, Mrs. William, 140 Prairie Haute
Randall, Mrs. Donald, 330 McDonough
Roter, Mrs. Alex, 2224 West Adams
Rother, Mrs. Paul, # 7 Elmwood Park
Schneider, Mrs. Thomas, 27 St. Henry Court
Schneider, Mrs. Vincent, 2207 West Adams
Scokel, Mrs. Paul, 47 St. Leonard Court
Smoller, Mrs. Martin, 208 Oriole
Thiele, Mrs. Otto, 2702 E. Camino
Westerfeld, Mrs. Roy, 32 Ayrshire, Route 4
Wipfler, Mrs. Earl, 143 N. Cardinal Lane
Yaeger, Mrs. Gerald, 1916 Sibley

MARION-RALLS-SHELBY COUNTIES
(Hannibal 63401)

Bach, Mrs. Lysle, 1737 Harrison Hill
Burns, Mrs. Francis, 2903 Hill
Canella, Mrs. John, 3254 St. Mary's Ave.
Clisham, Mrs. John, 300 Virginia
Fischer, Mrs. Thomas, 8 Orlando Dr.
Foreman, Mrs. Phillip, 3342 W. Ely Rd.
Glascock, Mrs. Donald, Palmyra 63461
Grant, Mrs. Albert J., 5008 College Ave.
Greene, Mrs. Harry, 1911 Harrison Hill
Hamlin, Mrs. Wyeth, 3405 St. Mary's Ave.
Hinds, Mrs. R. David, 2619 Bell
Landau, Mrs. Dan, 2901 Pleasant
Lanning, Mrs. Robert, 7 Cardiff Dr.
Latimer, Mrs. Walter, 2303 Palmyra Rd.
Lucke, Mrs. E. M., 4000 McMasters Ave.
Mann, Mrs. James K., 4914 College
Rapp, Mrs. Earl, 19 Holliday
Roller, Mrs. Merrill, 1000 Country Club
Steele, Mrs. James, 1106 Hill
Strong, Mrs. Richard, 10 Riverpoint
Sweets, Mrs. Henry, Jr., 207 N. 6th St.
Walterscheid, Mrs. John, 12 Riverpoint
Well, Mrs. Julius, Palmyra 63461

MILLER-MONITEAU-MORGAN

Buehler, Mrs. Carl T., Jr., Eldon 65026
Burke, Mrs. J. P., California 65018
Fulks, Mrs. Richard B., California 65018
Gallagher, Mrs. Lionel M., California 65018
Gunn, Mrs. Jack, Versailles 65084
Latham, Mrs. Kenyon, 200 S. High St., California 65018
Lyle, Mrs. Ray, Versailles 65084
Shelton, Mrs. E. O., Eldon 65026
Washburn, Mrs. J. L., Versailles 65084

MINERAL AREA
(St. Francois-Iron-Madison-Washington-Reynolds- Ste. Genevieve Counties)

Appleberry, Mrs. Charles H., 706 W. Main St., Flat River 63601
Appleberry, Mrs. Reuben, 815 W. Columbia, Farmington 63640
Brennan, Mrs. John A., 2 Hoctor Dr., Farmington 63640
Bull, Mrs. Ben, 109 S. Knob St., Ironton 63650
Burcham, Mrs. Tom R., Highway W., Farmington 63640
Carleton, Mrs. Charles E., 501 Center St., Farmington 63640
Chastain, Mrs. C. W., Route 3, Farmington 63640
Crouch, Mrs. F. Richard, 714 Ste. Genevieve St., Farmington 63640
Dennis, Mrs. Paul, 709 Tyler, Flat River 63601
Evans, Mrs. Albert, 113 Benham, Bonne Terre 63628
Ford, Mrs. William, 34 Tanglewood Ct., Farmington 63640
Foster, Mrs. Jack L., Desloge 63603
Grossman, Mrs. Marvin, 500 Marshall, Fredericktown 63645
Haw, Mrs. Marvin T., 207 Fite, Bonne Terre 63628
Huckstep, Mrs. Robert A., 1313 N. Washington, Farmington 63640
Hunt, Mrs. John W., Jr., 110 Bell, Leadwood 63653
Karraker, Mrs. Alvan G., 507 North St., Farmington 63640
Mullen, Mrs. Jack, Route 2, Bonne Terre 63628
Oliver, Mrs. George A., 117 Oak Hill Downs, Farmington 63640
Osborn, Mrs. R. W., III, State Hospital Grounds, Farmington 63640
Taylor, Mrs. Van W., 54 Church St., Bonne Terre 63628
Watkins, Mrs. George Linn, 812 Dewey, Farmington 63640
Watkins, Mrs. George L., 813 Dewey, Farmington 63640

PERRY-STE. GENEVIEVE

Carron, Mrs. Oscar A., 308 N. Waters, Perryville 63775
DeGenova, Mrs. Gerald H., 1280 Ridgeway Dr., Ste. Genevieve 63670
Fairchild, Mrs. James F., Route 2, Perryville 63775
Feltz, Mrs. Lawrence W., 20 S. Feltz, Perryville 63775
Fischer, Mrs. Theodore, Altenburg 63732
Lutkewitte, Mrs. Joseph F., 33 St. Jude Dr., Ste Genevieve 63670
McDermott, Mrs. Alfred E., 619 Bruce, Perryville 63775
Utterman, Mrs. William F., 614 S. Main St., Perryville 63775

PETTIS COUNTY
(Sedalia 65301)

Arnold, Mrs. Richard C., 1020 State Fair Blvd.
Bishop, Mrs. William T., 616 W. 6th St.
Boger, Mrs. John W., 2803 Skyline Dr.
Brady, Mrs. Charles H., 720 W. 5th St.
Braverman, Mrs. Elliot M., 2510 Wing Ave.
Brazos, Mrs. John, Route 2
Campbell, Mrs. Albert J., 1500 W. 16th St.
Campbell, Mrs. Albert J., Sr., 319 E. Broadway
Dyer, Mrs. D. P., 2511 Stephenson
Edwards, Mrs. David R., 1619 S. Moniteau
Eldenburg, Mrs. Donald, 2504 South Woodlawn Dr.
Fisher, Mrs. Stanley D., 2200 S. Kentucky
Glass, Mrs. Robert, 1400 State Fair Blvd.
Gonser, Mrs. Karl B., 1619 W. Broadway
Hite, Mrs. H. A., 416 S. Grand
Hopkins, Mrs. Thomas J., 1506 W. Broadway
Lamy, Mrs. John E., 509 W. Broadway
Long, Mrs. Frank B., 723 W. 7th
Mitchell, Mrs. John E., Broadway Arms Apt.
Proctor, Mrs. Donald C., 717 W. Sixth
Roberts, Mrs. Paul A., 101 E. Marshall, Sweet Springs 65351
Siegel, Mrs. Carl D., 810 S. Barrett
Snavely, Mrs. E. C., 908 S. Grand
Stauffacher, Mrs. Gordon C., 1313 W. Broadway
Stewart, Mrs. Robert H., 201 Driftwood Dr.
Trader, Miss Frances W., 219 W. 7th St.
Van Dyke, Mrs. Elmer, 2205 W. 5th St.
Walters, Mrs. A. L., 1000 W. 7th St.
Worley, Mrs. C. A., 102 W. Ray, Sweet Springs 65351

ST. LOUIS CITY
(St. Louis)

Abel, Mrs. Charles C., 1610 High School Dr. 63144
Abel, Mrs. Oliver, III, 409 Oakley Dr. 63105
Ahlering, Mrs. George H., 10 Crestwood 63105
Allen, Mrs. Hollis N., 681 N. Forest 63119
Allen, Mrs. Melvin A., 14 Lindworth Dr. 63124
Arneson, Mrs. Axel N., 6314 Waterman 63130
Backer, Mrs. Matt H., Jr., 101 Flamingo Dr. 63123
Balazs, Mrs. Karl J., 611 Cannonbury Dr. 63119
Bandle, Mrs. Donald F., 3801 January 63109
Barden, Mrs. Frank W., 41 Beaver Dr. 63141
Bartlett, Mrs. Robert W., 6459 Wydown 63105
Bartlett, Mrs. Willard, Jr., 6345 Ellenwood 63105
Bartlett, Mrs. Willard, Sr., 53 Westmoreland Pl. 63108
Bartnick, Mrs. Mitchell L., 6476 Eichelberger 63109
Bassett, Mrs. Robert B., 2 Beverly Pl. 63112
Becke, Mrs. William G., 18 Lorenzo La. 63124
Bell, Mrs. Robert M., 35 Glen Rd. 63119
Benage, Mrs. Charles M., 8604 White Ave. 63144
Benjamin, Mrs. Durand, 7340 Navarre Circle 63123
Berland, Mrs. Harry I., 29 Granada Way 63124
Bilsky, Mrs. Nathan, 2 Somerset Downs 63124
Bindbeutel, Mrs. Arthur H., 3953 Holly Hills 63116
Bindbeutel, Mrs. Donald A., 630 Westborough Pl. 63119
Bircher, Mrs. John L., 3932 Federer Pl. 63116
Boemer, Mrs. Lilburn C., 49 Clermont La. 63124
Bohrer, Mrs. Harry C., 4112 Flora Pl. 63110
Bosse, Mrs. Edwin H., Sr., 6906 Washington Ave. 63130
Bowdern, Mrs. Edward H., 2 Berkshire 63117
Boyd, Mrs. Arthur M., 6556 Delor Ave. 63109
Bradley, Mrs. Frank R., 7404 Oxford Dr. 63105
Bradley, Mrs. John Martin, 275 N. Union Blvd. 63108
Brennan, Mrs. George A., 10546 Hanford St. 63128
Brennan, Mrs. Robert Alexis, 6030 Highfield Rd. 63109
Bricker, Mrs. Eugene M., 43 Brair Cliff 63124
Brodeur, Mrs. Armand E., 141 Horseshoe Dr. 63122
Broun, Mrs. Goronwy Owen, 5290 Waterman 63108
Broun, Mrs. Goronwy Owen, Jr., 6359 Waterman 63130
Brown, Mrs. Clyde O., 7419 York Dr. 63105
Brown, Mrs. E. Eugene, 379 N. Taylor 63108
Brown, Mrs. James Barrett, 4 N. Kingshighway 63108
Brown, Mrs. Seymour, 2 Ricardo La. 63124
Bruns, Mrs. Kenneth, 6318 Washington 63130
Budd, Mrs. John J., Jr., 6144 McPherson 63112
Burns, Mrs. Francis J., 6500 Ellenwood 63105
Burroughs, Mrs. W. H., 7327 Pershing 63130
Burst, Mrs. Donald O., 61 Trent Dr. 63124
Byrne, Mrs. John Edward, 5878 Delor 63109
Cameron, Mrs. Solon, 43 Washington Terr. 63112
Cannon, Mrs. Edward M., 20 Briar Cliff 63124
Cannon, Mrs. William J., 43 Clermont Lane 63124
Cappel, Mrs. Powell B., 27 Old Westbury La. 63119
Carney, Mrs. Joseph E., 6625 Pernod Ave. 63139
Carroll, Mrs. George A., 7831 Delmar Blvd. 63130
Carter, Mrs. John F., 15 Friese Dr. 63132
Cary, Mrs. John M., 815 Brookside 63122
Chamness, Mrs. James T., 3 Town & Country Dr. 63124
Cherre, Mrs. Charles J., 10 Haddington Ct. 63105
Ciapciak, Mrs. Stanley J., 30 Log Cabin Dr. 63124
Clark, Mrs. Clarence L., 705 Questover Lane 63141
Collodi, Mrs. George A., 20 Southcote 63144

Conrad, Mrs. Adolph H., Jr., 9 Dromara Rd. 63124
Conrad, Mrs. Marshall B., 216 W. Jackson Ave. 63119
Cook, Mrs. Ralph L., 44 Nolan Dr. 63122
Cooper, Mrs. Thomas J., 30 Beverly Dr. 63132
Correnti, Mrs. Nicholas A., 6617 Ithaska 63109
Costa, Mrs. Dominic V., 10 Devondale La. 63131
Crossman, Mrs. Robert W., 1509 Holly Dr. 63119
Daake, Mrs. John W., 48 Portland Pl. 63108
Dalton, Mrs. Arthur R., 13133 Conway & Mason Road 63141
Danis, Mrs. Peter G., 16 Villa Coublay 63131
Dewald, Mrs. Paul A., 527 Warren Ave. 63130
Diehr, Mrs. Alvin H., 29 Rio Vista 63124
DiLeo, Mrs. Senatro W., 34 Ridgetop 63117
Donahoe, Mrs. James L., 7336 Princeton, University City 63130
Doyle, Mrs. Charles R., 28 Kingsbury Pl. 63112
Drake, Mrs. Truman G., 6344 Alexander 63105
Drews, Mrs. Robert C., 7361 Cornell Ave. 63130
Dreyer, Mrs. Carl Joseph, 45 Glen Rd. 63119
Dripps, Mrs. Roy C., 5210 Jamieson 63109
Dubuque, Mrs. Theodore J., Jr., 95 Aberdeen Pl. 63105
Eades, Mrs. Dee W., 6 Kingsbury Pl. 63112
Edwards, Mrs. Joseph C., 610 W. Polo Dr. 63105
Eigel, Mrs. Edwin G., 3654 Flora Pl. 63110
Ernst, Mrs. Edwin C., 2 Schultz Rd. 63122
Farley, Mrs. William, 2 Spoede Acres 63141
Feller, Mrs. Harold H., 5834 Bermuda Rd. 63121
Finn, Mrs. Murray Eugene, 47 Portland Pl. 63108
Fish, Mrs. Virgil O., 2500 Town & Country La. 63131
Fitzgerald, Mrs. Leo P., 7219 Cornell Ave. 63130
Flotte, Mrs. Sylvester A., 9113 Glen Garden 63136
Ford, Mrs. Lee T., Jr., 45 Green Acres 63137
Franklin, Mrs. Max S., 7536 Buckingham Dr. 63105
Fries, Mrs. Armand D., 11 W. Geyer La. 63131
Fries, Mrs. John, 106 Frontenac Forest 63131
Furls, Mrs. Gus John, 57 Broadview Dr. 63105
Gantner, Mrs. George E., Jr., 6641 Pershing Ave. 63130
Gettinger, Mrs. Andrew J., 8689 Oriole Ave. 63115
Gissy, Mrs. Carl J., 12008 Heather Dane Dr. 63131
Glaser, Mrs. Martin J., 3550 Hawthorne Blvd. 63104
Glick, Mrs. Harry N., Mason Rd., Route 13, Kirkwood 63122
Goldman, Mrs. Melvin L., 8650 Barby La. 63124
Gomez, Mrs. Cesar A., Jr., 18 Havenview Dr. 63141
Grebel, Mrs. Clement B., 58 Grantwood La. 63123
Greiner, Mrs. Theodore, 7507 Washington 63130
Gresick, Mrs. Robert J., 5475 Childress Ave. 63109
Grogan, Mrs. Frank M., 4166 Flora Pl. 63110
Grueb, Mrs. Paul M., 6 Grantwood La. 63123
Gum, Mrs. William R., 706 Bellerive Blvd. 63111
Gunn, Mrs. Walter T., 6742 Itaska 63109
Haeberle, Mrs. Frederick S., 3206 Hebert St. 63107
Hagebusch, Mrs. Omar E., 16 Covington La. 63132
Hall, Mrs. Preston C., 4243 Lafayette 63110
Hall, Mrs. Robert A., 43 Washington Terr. 63112
Hammond, Mrs. John J.. 7245 Maryland 63130
Hardesty, Mrs. John F., 5290 Waterman Ave. 63108
Harkins, Mrs. William B., 7 Kingsbury Pl. 63112
Harris, Mrs. Solon P., 7138 Maryland 63130
Harrison, Mrs. Lee B., 44 Ridgemoor Dr. 63105
Hartnett, Mrs. Leo B., 9835 Waterbury 63124
Hassett, Mrs. Henry A., 4440 Lindell 63108
Hawk, Mrs. Bray O., 3534 Hawthorne Blvd. 63104
Haynes, Mrs. Pugh, 8006 Gannon 63130
Henderlite, Mrs. John W., 3 S. Tealorook Dr. 63141
Henschel, Mrs. Eugene V., 55 Broadview Dr. 63105
Hilbert, Mrs. Paul H.. 5701 Pernod Ave. 63139
Hildreth, Mrs. H. Rommel, 711 Middle Polo Dr. 63105
Hogan, Mrs. Patrick C., 8935 Westhaven Ct. 63126
Hollo, Mrs. Vencel W., 5925 Lindell 63112
Hotz, Mrs. John W., 141 N. Gay 63105
James, Mrs. Norman A., 9926 Parkway Dr. 63137
Javaux, Mrs. Everett J., 7820 Delmar Blvd. 63130
Jensen, Mrs. Joshua E., 3 Brazillian Ct. 63124
Jones, Mrs. Otey S., 2010 Longfellow Blvd. 63104
Jones, Mrs. Vincent L., 123 N. Forsyth 63105
Kamakas, Mrs. Nicholas C., 4500 Nadine Ct. 63121
Karandjeff, Mrs. A. D., 8016 Walinca 63105
Karl, Mrs. Michael M., 14 Thorndell 63117
Kelley, Mrs. Robert W., 5371 Waterman Ave. 63112
Kendig, Mrs. John H., 841 Rolfe Dr., Kirkwood 63122
King, Mrs. Samuel J., 5000 S. Broadway 63111
Kinsella, Mrs. Edward D., 1157 Center Dr. 63117
Klein, Mrs. Harry A., 2 Sunswept Dr. 63141
Klippel, Mrs. Bernhardt W., 52 Fair Oaks 63124
Kluegel, Mrs. William A., 2845 Gravois Ave. 63118
Klym, Mrs. Nicholas, 1506 Doris Dr. 63138
Kneal, Mrs. Ellsworth, 725 S. Skinker 63105
Knight, Mrs. Franklin P., 11465 Fairlane Ct. 63136
Knight, Mrs. William A., Jr., 12 Briar Cliff 63124
Koehler, Mrs. George A., 5561 Mardel Ave. 63109
Koetter, Mrs. A. F., 6208 Rosebury Dr. 63105
Koon, Mrs. Bernard T., 2623 Gurney Ct. 63110
Kountz, Mrs. William B., 2619 Gurney Ct. 63110
Koutsoumpas, Mrs. William, 3024 Hawthorne Blvd. 63104
Kowert, Mrs. Edward H., 330 Planthurst Dr. 63119
Kramolowsky, Mrs. Helmuth H., 546 Sheffield Ave. 63119
Kuebrich, Mrs. Thomas C., 8361 Pepperdige 63134
Kuhlman, Mrs. Robert E., 6045 Lansdowne Ave. 63109
Ladd, Mrs. Charles B., 41 Fox Meadows 63128
Langsdorf, Mrs. Herbert S., 3681 Alberta Ave. 63116
Lanscher, Mrs. Elmer A., 8358 Racquet Dr. 63121
Lawton, Mrs. Thomas P., 410 Newstead Ave. N. 63108
Leavy, Mrs. Charles A., 9058 Monmouth Dr. 63117
Lembeck, Mrs. Joseph A., 4103 Flora Pl. 63110
Lerwick, Mrs. Everett R., 40 Portland Pl. 63108
Lewis, Mrs. J. Eugene, Jr., 7129 Kingsbury Ave. 63130
Lischer, Mrs. Carl E., 1 Bridle Creek Rd. 63124
Lohr, Mrs. Curtis H., 601 S. Brentwood Blvd. 63105
Lottes, Mrs. J. Otto, 1028 Winwood Dr. 63124
Lucido, Mrs. Joseph L., 6 Bellerive Acres 63121
Lugo, Mrs. Samuel, 9890 Wild Deer Rd. 63124
MacDonald, Mrs. John W., 4525 Lindell Blvd. 63108
MacDonald, Mrs. William O., 63 Briar Cliff 63124
Machek, Mrs. Otaker, 16 Carswold 63105
Macnish, Mrs. James M., 229 Bompart 63119
Maher, Mrs. Thomas F., Jr., 20 Willow Oak La. 63122
Martin, Mrs. Raymond T., 3468 Longfellow Blvd. 63104
Mathae, Mrs. George H., 3167 S. Grand Blvd. 63118
McMahon, Mrs. Alphonse, 5 Covington Meadow 63132
Meisenbach, Mrs. Albert E., 6454 Aberdeen, Dallas 30, Texas
Mendonsa, Mrs. Lawrence E., 138 Ridgecrest Dr., Chesterfield
Merenda, Mrs. Sam J., 45 Berry Road Pk. 63122
Merklin, Mrs. Anton L., 5926 Crane Circle 63109
Mestres, Mrs. Hugh M., 657 Lockwood Ct. 63119
Meyerhardt, Mrs. Milton H., 36 Lake Forest 63117
Montgomery, Mrs. Austin F., 18 Southcote Rd. 63144
Morfit, Mrs. John C., 7627 Wydown Blvd. 63105
Moskop, Mrs. Peter G., 3736 Dunnica Ave. 63116
Muckerman, Mrs. Richard I. C., 63 Lake Forest 63117
Mueller, Mrs. Robert, 683 W. Lockwood Ave. 63119
Mueller, Mrs. Wilbur K., 1160 S. McKnight Rd. 63117
Muether, Mrs. R. O., 19 Country Life Acres 63131
Mullins, Mrs. John E., 3962 Juniata St. 63116
Murphy, Mrs. James Patrick, 27 Berkshire 63117
Neilson, Mrs. Arthur W., 6349 Alexander Dr. 63105
Nemec, Mrs. Stanley S., 2870 S. Lindberg 63131
Nester, Mrs. Charles A., 3921 Federer Pl. 63116
Neun, Mrs. William F., 5862 Delor 63109
Nolan, Mrs. Charles J., 18 Bellerive Acres 63121
Northup, Mrs. Glenn R., 1105 Kostka, Florissant 63031
Nye, Mrs. Robert S., 4910 Broadway S. 63111
Obermeyer, Mrs. Charles G., 3957 Holly Hills Blvd. 63116
O'Neal, Mrs. Lawrence W., 1 Nassau Dr. 63124
Oppenheimer, Mrs. Henry E., 10 Enfield Rd. 63132
O'Reilly, Mrs. D. Elliott, 9054 Clayton Rd. 63117
Orenstein, Mrs. Joseph M., 417 Jackson Ave. N. 63130
O'Sullivan, Mrs. George A., 6181 Lindell 63112
Parashak, Mrs. Paul M., 7344 Whitehave Dr. 63123
Peden, Mrs. Joseph C., Jr., 51 Fair Oaks 63124
Peeler, Mrs. J. O., 10000 Knoll Crest Ct. 63136
Pernoud, Mrs. Flavius G., Jr., 841 Audubon Dr. 63105
Pernoud, Mrs. Michael F., 51 Frontenac 63131
Powers, Mrs. Pierce W., 4 Crestwood Dr. 63105
Presnell, Mrs. Cleitus Albert, 9839 Waterbury Dr. 63124
Pyne, Mrs. Herbert S., 5320 Mardel 63109
Rainey, Mrs. Robert, 5165 Lindell Blvd. 63108
Ramsey, Mrs. Robert H.. 10 Lake Pembroke Dr. 63135
Reich, Mrs. Harry A., 5100 Tamm Ave. 63109
Reilly, Mrs. Leo J., 898 Alanson Dr. 63132
Rendleman, Mrs. George F., 532 Midvale 63130
Rendleman, Mrs. George R., Jr., 7486 Amherst Ave. 63103

Repetto, Mrs. Albert M., 66 Berry Road Pk. 63122
Reuter, Mrs. Louis A., 2 Kingsbury Pl. 63112
Riordan, Mrs. Laurence M., 410 N. Newstead Ave. 63108
Ritter, Mrs. Hubert A., 6546 Walsh 63109
Roy, Mrs. Joseph A., 9412 Acosta Dr. 63137
Royce, Mrs. Robert K., 766 High Hampton Rd. 63124
Ruddell, Mrs. George W., 1333 Highmont 63135
Ryan, Mrs. Robert E., 1 West Point La. 63131
Sanders, Mrs. Robert D., 4214 Flora Pl. 63110
Sante, Mrs. LeRoy, 308 Orchard Ave. 63119
Sauer, Mrs. William Nicholas, 911 Tirrill Farm Rd. 63124
Schaerer, Mrs. Jacques P., 11 Schultz Rd. 63122
Schaper, Mrs. Ernest H., 2434 Bremerton Rd. 63144
Scheer, Mrs. George E., 53 Berkshire 63117
Schmidt, Mrs. Edwin H., 10240 Schuessler Rd. 63128
Schiemeier, Mrs. Roy H., 10220 Schuessler Rd. 63128
Schweiss, Mrs. John F., 1414 Westwind Dr. 63131
Sciortino, Mrs. Gaspare, 1019 Laval Dr. 63132
Scott, Mrs. Elwin Powers, 12718 Post Oak Rd. 63131
Sevastianos, Mrs. Aristides, 7121 Circleview Dr. 63123
Sexton, Mrs. Daniel L., 14 Crestwood Dr. 63105
Shaner, Mrs. John, 25 Bellerive Acres 63121
Sherwin, Mrs. Charles F., Lonedell 63060
Sherwin, Mrs. Charles S., 3971 Flora Pl. 63110
Simon, Mrs. Jerome I., 12 Westridge Ct. 63124
Smith, Mrs. Benjamin F., 104 Aberdeen Pl. 63105
Smith, Mrs. Garland F., 1115 Hampton Park Dr. 63117
Smith, Mrs. Herbert P., 9245 Sappington Rd. 63126
Smith, Mrs. Hugh R., 8836 Rock Forest Dr. 63123
Smolik, Mrs. Edmund A., 59 Middlesex Dr. 63144
Spoeneman, Mrs. Walter H., 18 Biritz Ct. 63137
Stanze, Mrs. F. J., 410 N. Newstead, Apt. 8W 63108
Stephens, Mrs. LeRoy, 218 Sylvester 63119
Stindel, Mrs. Charles E., 341 Violet La. 63119
Stone, Mrs. Charles A., 410 N. Newstead, Apt. 155 63108
Strominger, Mrs. Donald B., 701 Yale Ave. 63130
Stroud, Mrs. C. Malone, 6232 McPherson 63130
Stryker, Mrs. William I., 12 Oakleigh La. 63124
Sudholt, Mrs. Alfred F., Jr., 13398 Conway Rd., Normandy 63121
Sullivan, Mrs. Clement J., 6371 Waterman 63130
Summers, Mrs. John B., 4730 Prague 63109
Sweet, Mrs. Herbert C., 3 St. James Ct. 63119
Thale, Mrs. Thomas, 351 Meadow Brook, Ballwin 63011
Thompson, Mrs. J. William, 92 Lake Forest 63117
Thym, Mrs. Henry P., 6 Ridgetop Dr. 63117
Tjoflat, Mrs. Oliver E., 252 Woodbourne 63105
Tremain, Mrs. Irl G., 4254 Flora Pl. 63110
Tucker, Mrs. Eugene F., 1412 Dublin Dr. 63126
Uhlemeyer, Mrs. Henry A., Sr., 641 A. Geoffry La. 63132
Vandover, Mrs. John T., 3 Grantwood La. 63123
Vest, Mrs. James C., 2800 Stonington 63131
Virant, Mrs. John A., 119 S. Spoede Rd. 63141
Vitt, Mrs. Alvin E., 113 Frontenac Forest 63131
Von Kaenel, Mrs. Joseph E., 551 Barnes Rd. 63124
Wacker, Mrs. Leo L., 9115 Clydesdale Dr. 63126
Wagenback, Mrs. William F., 7348 Granbury Cr. 63123
Walker, Mrs. Francis S., 47 Middlesex Dr. 63144
Walters, Mrs. Harold E., 9 Huntleigh Woods 63131
Wattenberg, Mrs. Carl A., 49 Kingsbury Pl. 63112
Wegner, Mrs. Carl R., 7401 Wellington Ave. 63130
Weinel, Mrs. Francis G., 333 Oakwood Ave. 63119
Weinsberg, Mrs. William C., 6220 Helm 63109
Weir, Mrs. Don C., 625 Sherwood Dr. 63119
Welsh, Mrs. Laurence C., 103 Old Watson Rd. 63119
Wennerman, Mrs. Sam F., 501 Warren 63130
Werner, Mrs. William A., 6015 Childress Ave. 63109
Wiegand, Mrs. Herbert C., 40 Overhill Dr. 63124
Wilcox, Mrs. Claude V., 3175 Ivanhoe Ave. 63139
Wilson, Mrs. Keith S., 9 Crestwood Dr. 63105
Wilucki, Mrs. Melvin R., 6455 Westway Rd. 63109
Winter, Mrs. William C., 1030 Yale 63117
Wirthlin, Mrs. Edward H., 4709 Vienna 63109
Witt, Mrs. Clyde M., 11 Deer Creek Woods 63124
Wood, Mrs. V. Visscher, 6368 Washington 63130
Wotawa, Mrs. William J., 3804 Wilmington 63116
Young, Mrs. H. McClure, 245 Union Blvd. 63108
Young, Mrs. Leo P., 5046 S. Grand Blvd. 63111
Zahorsky, Mrs. Theodore S., 15 Arundel Pl. 63105
Zeitler, Mrs. William T., 152 Timbercrest Rd. 63122
Zink, Mrs. Oscar C., 9 The Orchards 63132

ST. LOUIS COUNTY

Ahlvin, Mrs. Robert C., 7061 Waterman Ave., University City 63130
Alex, Mrs. Morris, 18 Crosswinds 63132
Bagby, Mrs. J. W., 7 Country Life Acres 63131
Bailey, Mrs. William Harold, 9157 E. Milton Ave., Overland 63114
Bauer, Mrs. Robert A., 11 Harneywold Dr. 63136
Beam, Mrs. Sim F., 52 Middlesex Dr. 63144
Berndsen, Mrs. Gerard H., 12933 Topping Estates 63131
Bernstein, Mrs. Aaron M., 7033 Cornell Ave., University City 63130
Berwald, Mrs. Irvin I., 747 Old Bonhomme Rd., University City 63130
Blunt, Mrs. Charles P., 30 Plaza Square, Apt. 201 64103
Boles, Mrs. C. Read, 9307 Old Bonhomme Rd. 63132
Briscoe, Mrs. John R., 10053 Briarwood, Ladue
Brother, Mrs. George M., 15 Frederick La., Glendale 63122
Brown, Mrs. Eugene R., 7433 Gannon Ave., University City 63130
Cacioppo, Mrs. Joseph E., 1809 New Jamestown Rd. 63138
Carlson, Mrs. Arne E., 89 Pebblebrook La., Creve Coeur 63141
Carr, Mrs. G. Thomas, 11461 Fair Acres Rd. 63136
Catanzaro, Mrs. R. E., 24 Foxboro Rd., Ladue
Chinsky, Mrs. Murray, 7200 Colgate Ave., University City 63130
Coldwater, Mrs. Kenneth, 1520 Ridgewood Dr. 63126
Costrino, Mrs. John J., 922 Jeanerette Dr., University City 63130
Costrino, Mrs. Joseph A., 12567 Conway Rd., Creve Coeur 63141
Cowdry, Mrs. Edmund V., Jr., 30 Crestwood Dr., Clayton 63105
Cruvant, Mrs. Bernard A., 529 Midvale, University City 63130
Davidson, Mrs. Morris, 128 Frontenac Forest 63131
Davis, Mrs. Edgar W., 49 Woodcrest Dr., Ladue
Denny, Mrs. Robert B., 7827 Delmar Blvd., University City 63130
Deyton, Mrs. John W., 659 Fairview Ave., Webster Groves 63119
Diehr, Mrs. Maurice A., 28 Dromara Rd., Ladue
Dill, Mrs. Foster A., 1551 Bellevue Ave., Richmond Heights 63117
Doisy, Mrs. Robert A., 103 Edwin Ave., Glendale 63122
Dowd, Mrs. James F., 30 Brentmoor Park, Clayton 63105
Dyer, Mrs. Clyde P., Route 2, Box 360, Carmel, Calif. 93921
Efron, Mrs. Joseph, 1116 Olivaire La. 63132
Eidelman, Mrs. Jack R., 8001 Watkins Dr., Clayton 63105
Eller, Mrs. C. Howe, 1408 Fawnvalley Dr. 63131
Ellison, Mrs. Leroy E., 7346 Myrtle Ave., Maplewood 63143
Emerson, Mrs. Reynolds L., 618 S. Rock Hill Rd., Webster Groves 63119
Estes, Mrs. Jack M., 57 Dellwood 63135
Ferrara, Mrs. John P., 31 Bellerive Acres, Normandy 63121
Finkel, Mrs. Barney W., 7210 Bristol Dr., Normandy 63121
Fletes, Mrs. James W., 5601 Lindell Blvd. 63112
Flynn, Mrs. Thomas T., 429 Forest Green, Webster Groves 63119
Forsman, Mrs. Waldo W., 4128 S. Lindbergh Blvd. 63127
Fox, Mrs. Leon J., 903 S. Warson Rd., Ladue
Freiheit, Mrs. Harold J., 3 Devondale La. 63131
Fuchs, Mrs. George J., Route # 2, Barnett
Gall, Mrs. Ira G., 333 Tanglewood, Ladue
Gitt, Mrs. Joseph J., 1025 S. Warson Rd., Ladue
Goodman, Mrs. Nathaniel, 9 Scarsdale La., Richmond Hts. 63117
Goodrich, Mrs. Harold A., 52 S. Rock Hill Rd., Webster Groves 63119
Grundmann, Mrs. William H., 6948 Delmar Blvd., University City 63130
Hale, Mrs. T. H., 245 Union Blvd. 63112
Hamilton, Mrs. Caldwell K., 11317 Mosley La., Creve Coeur 63141
Hampton, Mrs. Oscar P., 8153 Stanford Ct., University City 63130
Hayward, Mrs. John D., 221 Clay Ave. S., Kirkwood 63122
Helbing, Mrs. Edward J., 698 Greenview Dr., Glendale 63122
Hoard, Mrs. Joseph W., 129 E. Kirkham Ave., Webster Groves 63119
Hobbs, Mrs. John E., 25 Woodcrest Dr., Ladue
Hogancamp, Mrs. Charles E., # 5 Huntleigh Manor 63131
Holscher, Mrs. Edward C., 234 W. Jackson Rd., Webster Groves 63119
Howe, Mrs. Albert L., 8750 Eulalie, Brentwood 63144
Howe, Mrs. Louis F., 1136 Ridgelynn Dr. 63124
Hughes, Mrs. Robert G., 41 Chaminade Dr., Creve Coeur 63141
Izmarlian, Mrs. Grant, 525 Fairview Ave., Webster Groves 63119
Jacobs, Mrs. Frederick, 7308 Winchester Dr., Normandy 63121
Kaskie, Mrs. Clifford R., 30 Berkshire, Richmond Hts. 63117
Kendis, Mrs. Joseph B., 19 Warson Terr., Clayton 63124
Kilker, Mrs. Clarence H., 7231 Winchester Dr., Normandy 63121
Kimelman, Mrs. Nathan, 21 Granada Way 63124
King, Mrs. E. E., 2915 Bellerive Dr., Normandy 63121
Kingsland, Mrs. Robert C., 12 Oak Terr., Webster Groves 63119
Klippel, Mrs. Allen, 7112 Wydown Blvd., Clayton 63105
Koch, Mrs. Robert E., 10036 Conway Rd. 63124

Kopp, Mrs. Jules H., 23 Arbor Terr. 63132
Krieger, Mrs. John Louis, 28 Berry Road Pk. 63122
Lansche, Mrs. W. Edward, 809 Rampart Dr. 63122
Leslie, Mrs. C. H., 1313 N. Harrison Ave., Kirkwood 63122
Lessner, Mrs. Bart, 6227 McPherson, Clayton 63105
Lipschitz, Mrs. Ervin, 30 Kentom Pl. 63132
Lord, Mrs. Richard, 8 Mayfair Rd. 63124
Luehrs, Mrs. Robert O., Apt. 2A Hanley Towers, 900 S. Hanley Rd., Clayton 63105
Luke, Mrs. Herbert, 675 Hargrove La., Florissant
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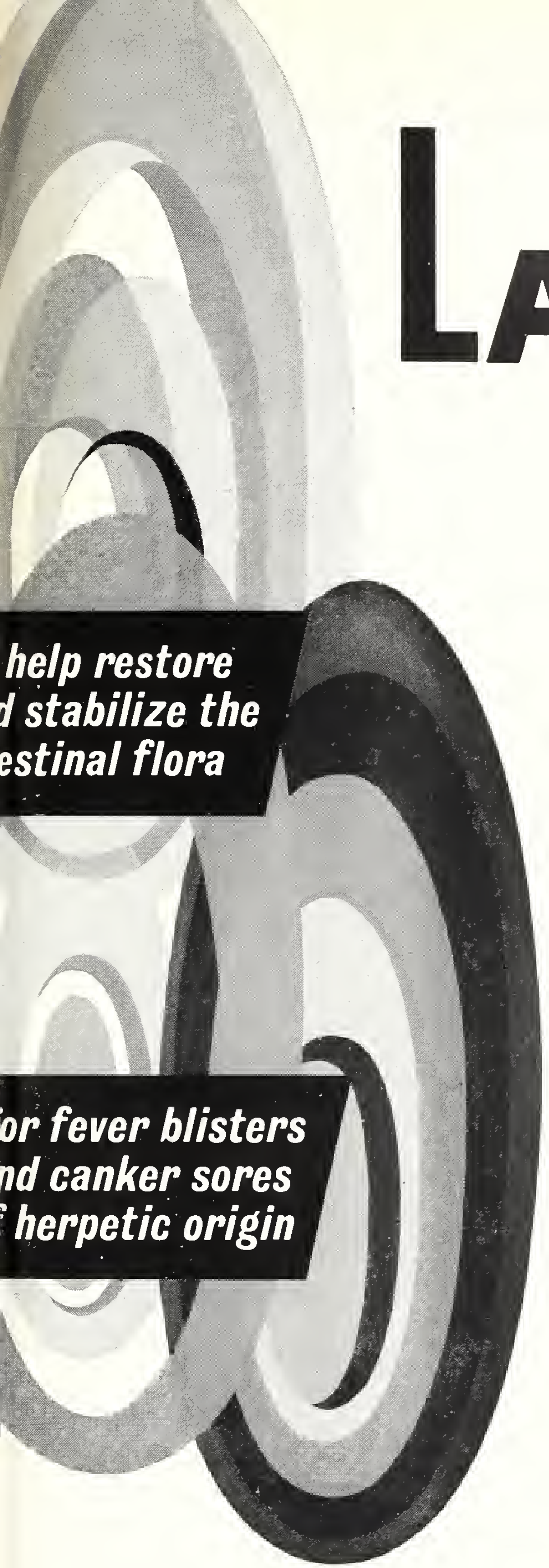

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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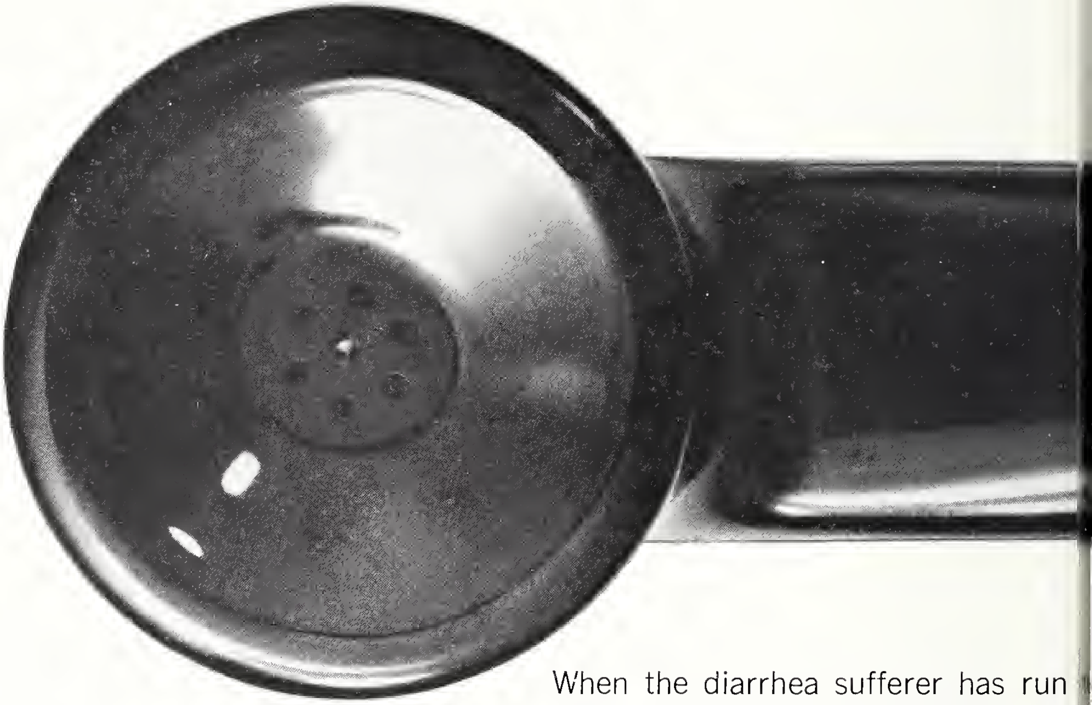

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Tom O'Brien Submits Resignation

The Executive Secretary of Missouri State Medical Association for the past 21 years, Thomas R. O'Brien, has submitted his resignation. The action came during the May 22-23 meeting of the Council in St. Louis, but no final action was taken pending examination and reorganization of the Executive Office. Raymond McIntyre, long-time Field Secretary for the Association, was named Acting Executive Secretary and will assume full responsibility when the reorganization is approved formally.

In submitting his resignation, O'Brien told the Council, "For more than 20 years the Missouri State Medical Association has been my life. I state this simply as a fact. The programs of the Association, the people of the Association, the problems of medicine in Missouri have filled my mind and have taken all the energy and effort of which I was capable."

The decision to leave the MSMA position was made on doctor's orders. O'Brien suffered one heart attack early in 1964 and a second one early this year. Although restricting his activities, he will continue as Executive Director of Blue Shield, and will serve the Medical Association in a less active capacity.

T. R. O'Brien

O'Brien said that he wanted to tell the Council and all of the doctors of Missouri, "that I leave your active service with a sense of fulfillment, not simply because of the work I have had a part in, but also because of the rewarding personal attachments I have had with so many of you for so many years. I have loved my job."

Council Chairman, Dr. Hector W. Benoit, expressed regret that the step had to be taken. He said that he was speaking for the entire Council in thanking Mr. O'Brien for his years of service, and he expressed confidence that in years to come the Medical Association would be able to call on Mr. O'Brien for counsel and guidance.

Dr. George A. Ulett, Director of the Missouri Division of Mental Diseases, informed the Council that the State Hospitals are going to lose some foreign medical doctors unless the regulations covering temporary licensure are eased. The Council voted approval of a plan under which the State Board of Registration for the Healing Arts could consider such cases individually on their own merit.

The Council also requested the Healing Arts Board to investigate the question which has been raised concerning the right of ophthalmological technicians to fit contact lenses. Further MSMA action in this area will depend to a large extent on the findings of the investigation.

MSMA President, Dr. Paul Whitener, reported on a proposal for utilizing medical school facilities at the University of Missouri, Washington University and St. Louis University to expand continuing medical education programs for Missouri physicians. The Association's Committee on Scientific and Postgraduate Work was instructed to study the matter and report back to the Council.

Doctor Benoit raised the subject of establishing better communication and liaison with the medical specialty organizations. It was agreed that representatives of various specialty groups be invited to the next Council meeting to offer their ideas on this matter.

Members attending the meeting:

Hector W. Benoit, Jr., M.D., Chairman, 7th District
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John I. Matthews, M.D., MSMA, Secretary
Walter T. Gunn, M.D., MSMA Treasurer

The next Council meeting will be held in Boonville, October 2 and 3.

This Council report covers only the highlights of the May meeting. The official Minutes of the meeting have been sent to all local Societies where they are available for examination by any interested member of the Association.

AMA Takes Wait-and-See Position on 'Medicare'

The House of Delegates of the American Medical Association, meeting in its 114th Annual Convention, refused to take any drastic action in regard to medical care for the aged legislation which is pending in Congress. The House recommended instead that AMA members be reminded that "it is each individual physician's obligation to decide for himself whether the conditions of a case for which he is about to accept responsibility permit him to provide his own highest quality of medical care."

In adopting the resolution, the House made it clear that the action should in no way be interpreted as a change in the AMA's Principles of Ethics or in the principles of the so-called "Bauer amendment" of 1961. Final action came after extensive debate on the question of medicine's proper reaction to "medicare" legislation. The resolution represented a defeat for those who argued that the AMA should adopt a policy of nonparticipation in any "medicare" program.

The House left the door open, however, to give further consideration to the subject after Congress completes work on the legislation.

Dr. Charles L. Hudson of Cleveland, Ohio, a member of the AMA Board of Trustees since 1961, was named President-Elect of the Association. He defeated Dr. Durward Hall of Springfield, Missouri, on the third ballot and then only by a very narrow margin.

Mrs. Richard A. Sutter of St. Louis, Missouri, was installed as President of the Woman's Auxiliary to the AMA.

The House of Delegates examined the report and recommendations of the President's Commission on Heart Disease, Cancer and Stroke, but found little to praise in its basic proposals. The Delegates recommended that, instead of creating a new complex of medical centers, existing education, research and patient-care facilities be expanded to do the desired work.

Among many other actions, the House reaffirmed AMA policy concerning the practice of radiology, pathology, anesthesiology and physical medicine in hospitals; referred to the Council on Medical Education several resolutions calling for the creation and approval of an American Board of Family Practice; and called on state medical associatons to participate actively in the formation of State Associations of the Professions.

Paid In Full!

The President of the St. Louis County Medical Society, Dr. James Sisk, announces that all members had paid their dues and public relations assessments in full as of June 1. "This 100% response to our appeal for early payment of dues is most gratifying," said Doctor Sisk. "It is the highest endorsement we have yet received for what we have tried to do for our members and the public."

The Society is the third largest in Missouri with 454 members.

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New Officers for MMPAC

F. Thomas Moseley, M.D., of Springfield has been selected to serve as chairman of the Missouri Medical Political Action Committee (MMPAC) for the 1965-66 year. Doctor Moseley was elected by a telephone and mail poll of members of the Board of Directors and will succeed Ralph Perry, M.D., of Kansas City. The new Chairman said that the Board will be asked to meet in the near future to discuss specific programs for the year. He indicated that the principal effort will be directed toward stimulating broader support and participation among physicians (see Editorial).

Doctor Moseley

New members to the Board of Directors also were elected. They are:

Hector W. Benoit, Jr., M.D., Kansas City, one year term.

John A. Griffith, Jr., M.D., Kansas City, two year term.

Leonard T. Furlow, M.D., St. Louis, two year term.

Mrs. Edward H. Stratemeier, Jr., Kansas City, two year term.

W. D. Bradshaw, M.D., Clinton, three year term.

Richard V. Bradley, M.D., Clayton, three year term.

C. Stuart Exon, M.D., Jefferson City, three year term.

Thompson E. Potter, M.D., St. Joseph, three year term.

Mrs. E. V. Cowdry, Jr., St. Louis, three year term.

At their organizational meeting, Board members agreed that the effectiveness of MMPAC should be improved by establishing better liaison with the Missouri State Medical Association. Legally the two organizations are separate entities. The Medical Association may, however, assist the Political Action Committee in administrative and educational activities not dealing with candidate support.

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Missouri Medicine

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ROBERT PAINE, M.D., *St. Louis*

The Nervous System and the Heart

Part I

Because the neural mechanisms of many familiar cardiac phenomena are recognized, because therapeutic techniques and drugs increasingly employ the neuro-cardiac apparatus and because the era of organ transplantation is bringing a fresh need for understanding cardiac control mechanisms, a review of the physiologic relations of the nervous system and the heart seems timely.

An enormous body of information concerning cardiac neural control has been acquired, but much of the information is scattered and difficult to weave into a useful whole. This review attempts to provide some added measure of cohesion to this large field of knowledge.

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Behavior of the Heart in Absence of Extrinsic Innervation

Consideration of the neural regulation of of cardiac behavior might well begin with an examination of the functional characteristics of the denervated heart. The heart-lung preparation, from which have come classic observations of cardiac performance, has provided abundant information regarding cardiac function after extrinsic denervation. Since 1884,[1] it has been known that the isolated heart responds to an increase in filling pressure with increased diastolic size and stroke work. Augmented peripheral resistance has likewise been followed by diastolic enlargement and more vigorous contraction.[2-10] While manipulation of work load has provoked no change in the heart rate of the isolated heart, some observers have described an increase in output with tachycardia. Starling, however, found variation in rate between wide limits (60-160 beats per minute) to be without effect upon minute flow.[11-14]

Less drastic means of cardiac denervation have been attempted in a variety of ways. Vagotomy and partial sympathectomy, with removal of the sympathetic chain from the mid-cervical to fifth dorsal ganglia, although providing incomplete denervation, has been followed by changes in cardiac performance.[15] Prior to denervation, dogs used in such experiments developed upon exercise an increased heart rate, cardiac output and cardiac work, *without significantly altered stroke volume and with decreased end diastolic volume.* Postoperatively there was no change in heart rate upon exercise, a considerable increase in stroke volume and end diastolic size and *subnormal output and work response.*

	Heart Rate	*Stroke Volume*	*Cardiac Output*	*Cardiac Work*
Control	+22%	+ 6%	+33%	+51%
Postoperative	No change	+21%	+18%	+26%

With intact vagi, the animals exhibited a modest (6%) increase in heart rate upon exercise and considerable increase in stroke volume. Significantly, in absolute terms, the animals exhibited *diminished cardiac response to exercise after sympathectomy* with or without vagotomy.

These mechanical effects of myocardial neural deprivation can be anticipated since a striking increase in stroke work has been demonstrated to follow sympathetic stimulation or norepinephrine administration to the modified heart-lung preparation (Fig. 1).[16-19] From virtually all observed diastolic sizes the hearts produced considerably more stroke work after sympathomimetic activity (Fig. 1).

After denervation by ganglionic blockade,[20-22] the subsequent hypotension has been found, by perfusion of an isolated innervated arterial bed,[23] to be associated with diminished peripheral blood flow and *increased* peripheral resistance, in the presence of normal central venous pressure. Since hypotension in the presence of increased peripheral resistance and decreased blood flow can occur only in the presence of reduced cardiac output, the discovery of normal filling pressure is significant evidence of curtailed myocardial function in the presence of ganglionic blocking agents. In other experiments, while central venous pressure was maintained by infusion from a reservoir, cardiac output was again found to diminish after ganglionic blockage.

In other observations, after ganglionic blockade[24] had reduced atrial pressure, cardiac output and stroke volume, the assumption of a head-down position restored atrial pressure to normal but cardiac output and stroke work failed to recover. This suggests a loss of myocardial capacity after interruption of nervous pathways.

Similar observations have illustrated the effects of blocking agents upon cardiac accommodation to increased venous return.[25] Transfusion of normal animals caused no change in central blood volume and little increase in cardiac output and left ventricular work. With similar transfusions after administration of Trimethaphan Camphorsulfonate, central blood volume, cardiac output, and left ventricular stroke work increased sharply. Blockage "uncovered" the cardiac responses seen in the denervated heart and seldom found in the intact animal.[26-30]

Partial removal of the sympathetic chains in the neck has provoked detectable chemical al-

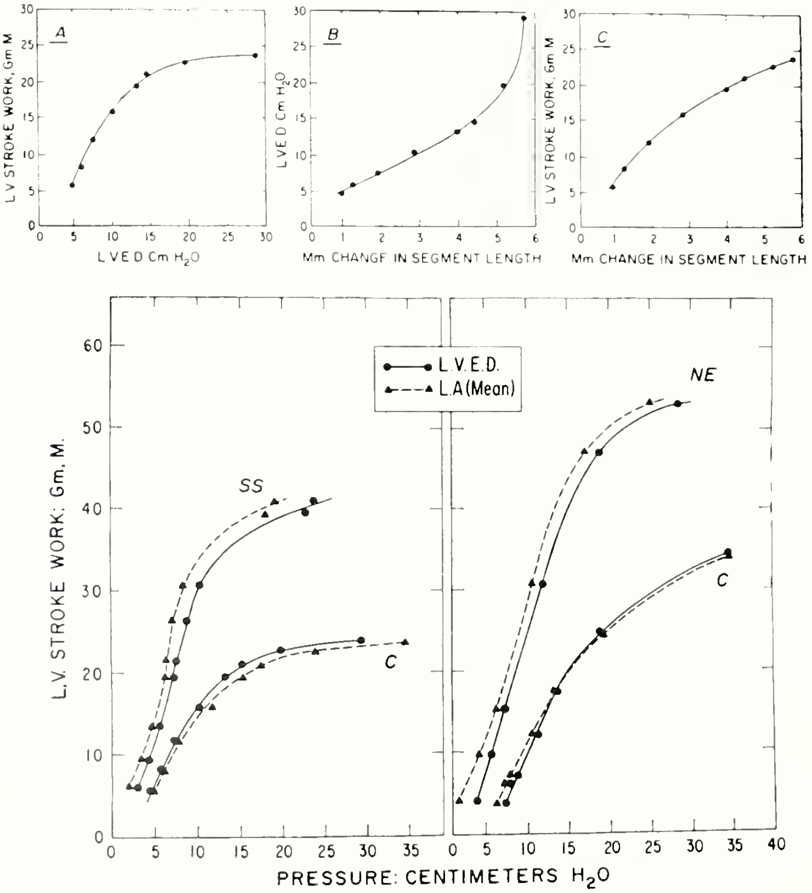

Fig. 1 The relation of ventricular filling pressure to stroke work and the influence of sympathetic stimulation (SS) and norepinephrine (NE) upon this relationship. (C) Control. (LVED) Left ventricular end diastolic pressure.[16]

terations in the myocardium.[31] While the intact sheep heart contains catecholamines primarily as norepinephrine, extirpation of the right cervical chain has been followed by increased concentration of this amine although the epinephrine content appeared to diminish. Removal of the left cervical chain, including the left stellate ganglion seemed to have little effect upon norepinephrine content within the myocardium; conversely epinephrine concentration was depleted. However, after right stellate ganglionectomy, a considerable loss of norepinephrine content, to 20-33% of normal, occurred, together with further dimunition in epinephrine. Similar catechol depletion has followed intra mediastinal denervation of the heart.[32] Left ventricular catechol concentration was noted to be 0.57 to 0.98 μg/gram of tissue initially while one to two days postoperatively the content was 0.17 to 0.74 μg/gram; three to 68 days postoperatively the concentration did not exceed .05 μg/gram. After extirpation of the stellate and first five thoracic ganglia, myocardial catechol content was 0.41 to 0.62 μg/gram.

VAGAL CARDIO-MOTOR INFLUENCE

It has been realized for many years that the dominant cardioinhibitory mechanisms reside in parasympathetic action mediated through the vagus nerves. This fact has been amply shown by the ungoverned tachycardia and dimunition of net cardiac output when these nerves are severed.

Mechanical effects of vagal stimulation classically include bradycardia, with[33] increased ventricular systolic and diastolic pressure and size and, if stimulation is sufficiently vigorous, diminished output and systemic blood pressure (Fig. 2). When, however, heart rate is maintained during vagal excitation by intracardiac electrical pacer the ventricular effects are limited to a slight decrease in ventricular systolic pressure, and in some[34] experiments to a modest decrease in cardiac output and blood pressure. That this reduction in left ventricular vigor might result directly from vagal influence is suggested by the discovery[35] of vagal motor fibers extending into the ventricles. Analysis of pulse tracings[36] has also suggested a vagal weakening of ventricular contraction. Nevertheless, undoubted reduction of atrial contractility, with its attendant slackening of ventricular filling, might more credibly be the explanation for ventricular responses to efferent vagal stimulation.[16] That these effects are slight is attested by failure of other observers to find any significant ventricular alteration.[37]

The Editorial Board of MISSOURI MEDICINE has broken with long-standing practice in order to publish the scientific paper, *The Nervous System and The Heart*, by Dr. Robert Paine. Space limitations preclude publication of this very scholarly work in a single issue. Therefore, the paper has been divided into four segments. Part I appears in this issue; Parts II, III and IV will appear in subsequent months.

The extensive Bibliography also has been divided, but reference numbers will be continuous from installment to installment.

To provide the reader with an overall view of Doctor Paine's work, the Editors offer the following outline:

The Nervous System and The Heart

Part I

Behavior of the Heart in Absence of Extrinsic Innervation
1. Mechanical Characteristics
    a. After Total Denervation
    b. After Partial Denervation
        Vagectomy
        Sympathectomy
        Ganglionic Blockade
2. Vagal Cardio-Motor Influence
    a. Upon Pump Properties
    b. Upon Coronary Flow
    c. Upon Individual Myocardial Cells

Part II

Effects of Sympathetic Stimulation
1. Mechanical Myocardial Functions
2. Coronary Flow
3. Conduction Apparatus
4. Single Cells
5. Cellular Chemistry

Sensing Apparatus of the Heart and Great Vessels
1. Carotid Sinus
2. Aortic Receptors
3. Intra-Cardiac and Caval Receptors
    Right Atrial and Ventricular and Caval Reflexes
    Left Heart Afferents

Part III

The Central Neural Apparatus
1. Spinal Cord; Lateral Sympathetic Neurones
2. Medulla; Vasomotor Center and Medullo-Spinal Paths
3. Hypothalmus; Vasoactive Areas
4. Cerebellum
5. Cerebral Cortex

Neural Regulation of Adrenal Medulla
Neural Participation in Cardiac Response to Exercise and Emotion

Part IV

Cardiac Alterations Induced by Neural and Visceral Disorders
Pharmacologic Manipulation of Myocardial Neurohormones
Speculation

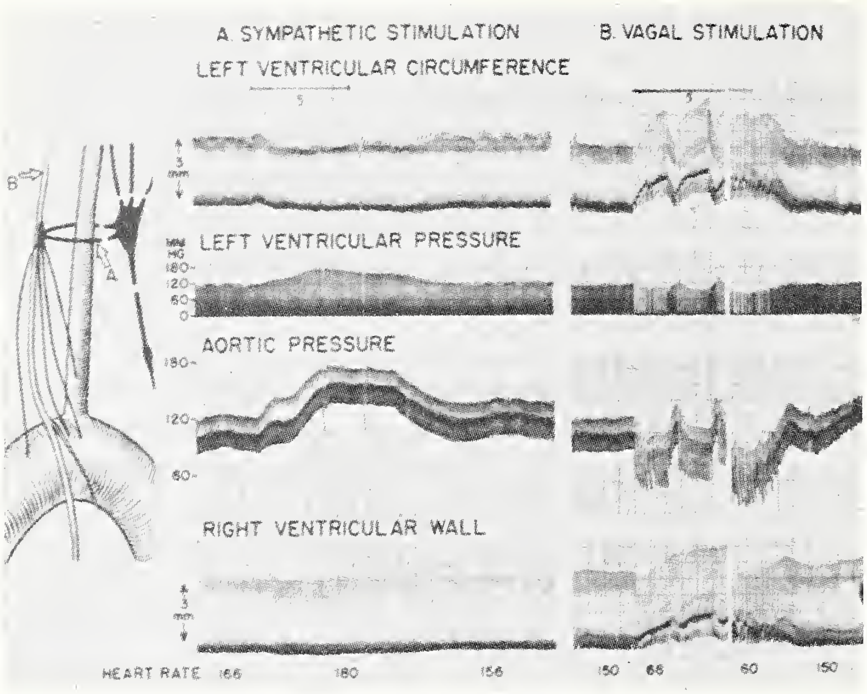

Fig. 2 Effect of Sympathetic (A) and Vagal (B) stimulation upon ventricular size, pressure and aortic pressure.[37]

Of considerable importance are coronary flow measurements during vagal stimulation or administration of acetylcholine. Direct measurement of left coronary flow by rotameter[38] or electromagnetic flow meter[34] has demonstrated no change in rate of coronary flow after vagal stimulation other than the change attendant upon blood pressure variation. Intracoronary injection of 20 μg of acetylcholine has been shown by the same type of study to augment coronary flow massively (106%) while causing no significant alteration in cardiac output (+6%) or work (+2%).

One might gather that the effects of the vagi are reflected predominantly on the pacemaker mechanisms. On the other hand it is now realized that these nerves through the liberation of acetylcholine have various important effects on cell function and behavior. Single cell micro electrode recordings in the sino auricular node have revealed increased resting potential, diminished action potential amplitude and remarkable suppression of spontaneous depolarization in pacemaker cells during vagal stimulation or acetylcholine application[39-43] (Fig. 3). Since resting potential probably results from potassium egress from within cells, these observations are compatible with other evidence that vagal activity facilitates potassium transfer and increases resting potential toward potassium equilibrium potential.[44, 45]

Within the atria lie scattered constellations of cells characterized by the spontaneous diastolic depolarization seen in potential pacemakers.[46, 47] Recordings from these cells have shown them to be affected in a fashion similar to sino atrial cells, but with less acute sensitivity.

The "drone cells," the common atrial cells, exhibit increased resting potential and shortened action potential and in addition accelerated speed of conduction[48, 49, 46] under the impact of vagal stimulation.

The outer border of the atrio-ventricular node composed of cells distinguished by slow rate of conduction, low amplitude of action potential and more gradual upstroke,[46] provides a considerable portion of the normal atrio-ventricular conduction delay and is especially sensitive to parasympathomimetic influence. Recordings have shown progressive slowing of depolarization with vagal stimulation, culminating in low, slowly conducted action potentials and finally in complete failure of impulse propagation (Fig. 4).

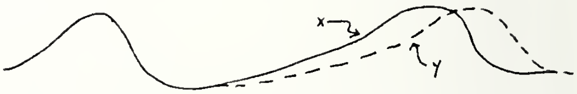

Fig. 3 Sino-Atrial Node. The solid line represents normal action potentials with characteristic depolarization in diastole, reaching threshold (X). Vagal effect upon diastolic depolarization is indicated by the dotted line, with delayed arrival at threshold (Y).

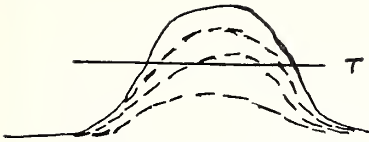

Fig. 4 Atrio-Ventricular Node. The solid line represents normal action potential. Successively lower dotted lines represent progressive vagal effect upon the rate and degree of depolarization and upon the time of arrival at threshold (T).

The demonstrated delay in arrival at threshold offers clear evidence of the mechanism of partial conduction impairment while the failure to develop a propagated potential offers precise information regarding complete atrio-ventricular block.

Micro electrode cannulation of Purkinje, His bundle and ventricular cells exhibits no sign of vagal influence upon these structures.

The second installment of *The Nervous System and the Heart* will be published in the September issue of Missouri Medicine.

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Giant Cell Aortitis With Rupture of Abdominal Aorta

Case Report

GIANT CELL AORTITIS with rupture of abdominal aorta is an uncommon cause of death in elderly people. Magarey[1] described a single case with dissection in the ascending aorta and rupture into the pericardial sac. McMillen[2] reported a partial tear in the ascending aorta without dissection.

Ainsworth *et al*[3] have described two patients with the condition in the abdominal aorta with rupture and sudden death. Because of the rarity of this disease it seemed of interest to present an additional case.

CASE REPORT

The patient was a 66-year-old white male who had had several cardiac infarcts and was on anticoagulant therapy. Several months prior to his final admission, pain developed in the region of lumbar spine. Symptomatic treatment gave little relief. X-ray examination revealed osteoarthritic changes in the lumbar spine. He was admitted on November 3, 1963 with severe low back pain and pain in the left leg. No fever or headache was present at anytime. There was no limitation of leg motion but moderate dorsi-flexion of the left big toe was noted. Examination of the abdomen was negative. The clinical impression was radiculitis due to a ruptured disc at the level of L4, L5, and the left leg was put in traction. The patient died suddenly on the second day after admission.

At autopsy the abdominal aorta showed a fusiform aneurysmal dilatation measuring 8 cm. in length and 6 cm. in greater diameter. This extended from a point 2 cm. below the renal arteries to 3 cm. below the aortic bifurcation and into the common iliac arteries (Fig. 1). The wall of the aneurysmal sac was thin and the lumen contained a thin layer of recent mural thrombus. The aneurysmal wall showed a 3.5 cm. linear tear midway in its right lateral wall. Surrounding the perforation were old and recent blood clots. The latter extended over both psoas muscles in the retroperitoneal space. The aorta showed minimal degree of atherosclerosis in abdominal portion. There was no "tree barking." The retroperitoneal space was full of about 3,500 cc. of blood from a recent hemorrhage. The heart weighed 450 gm. The anterolateral wall of the left ventricle and upper one-third of septum showed whitish myocardial scars measuring up to 2 x 1 cm. In general the coronary arteries showed mild atherosclerotic thickening. The circumflex coronary artery at a point 4 cm. from its origin, was occluded by an old thrombus, and beyond it for 1 cm. the lumen was pinpoint in calibre. No significant changes were found in other organs.

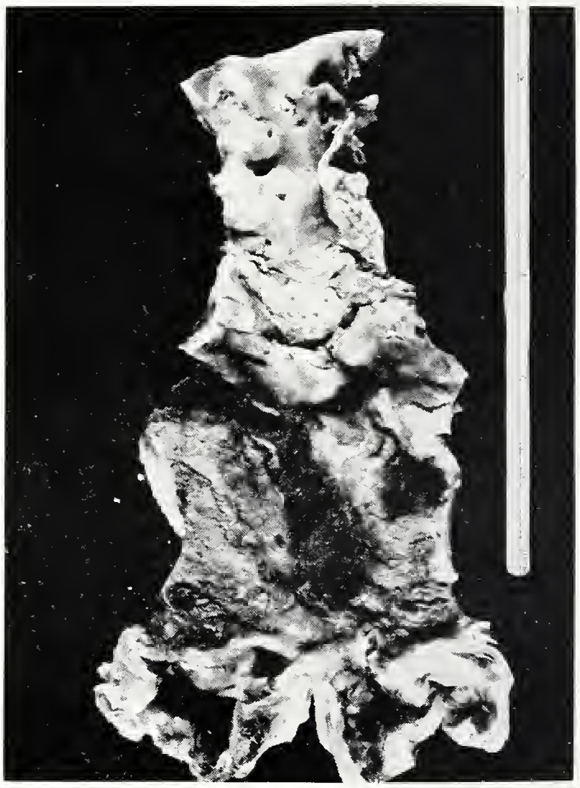

Fig. 1 The opened abdominal aorta. There is only moderate fusiform dilatation. The wall is very thin and the intimal surface is covered by old and recent mural thrombus. The common iliac vessels are dilated.

Sections from the aneurysmal wall in the region of rupture showed extensive destruction of the muscle and elastic tissues, and these elements were replaced by dense collagen. No cystic necrosis of media was seen. Many foci of plasma cells and lymphocytes were present and in these foci occasional multi-nucleated giant cells were seen (Fig. 2). Stains for acid-fast bacilli, fungi, and bacteria were negative. Sections from the circumflex artery showed an organized recanalized thrombus and evidence of mild atherosclerotic fibrosis. No giant cells were found.

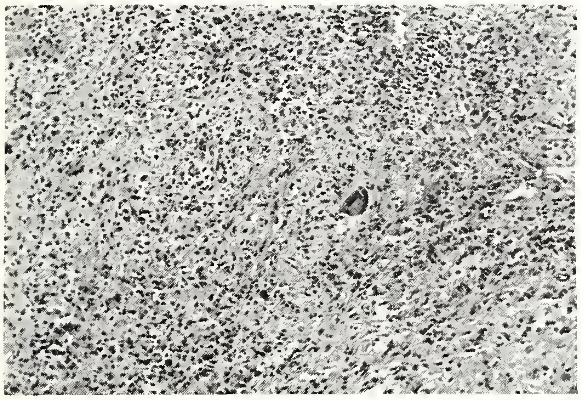

Fig. 2 Detailed photomicrograph of a section from the site of rupture showing the collagen and cellular infiltrate in the region of media with a multinucleated giant cell. A few giant cells are also seen in stage of formation in the cellular infiltrate. (Haematoxylin and eosin. ×250).

The temporal arteries were not examined because there was no suspicion of existing giant cell arteritis and because of absence of any previous or present history of temporal headaches or fever. Examination of other medium sized vessels in the muscle, mesentery, etc., did not show any changes. Multiple sections from the thoracic aorta and arch of aorta also were negative.

Discussion

The immediate cause of death in this patient was rupture of abdominal aorta and sudden loss of blood with resultant shock. On gross examination of aorta, the finding of the aneurysm with rupture, in absence of atherosclerosis or any other commoner cause, prompted us to study many microscopic sections from the aneurysmal sac to find the cause of aneurysm in this unusual case. The microscopic finding of giant cells, plasma cells, lymphocytes and destruction of muscle and elastic tissue in media and its replacement by dense collagen prompted us to think that the underlying lesion in this case was of the nature of an unusual condition which has been described under the heading of "giant cell aortitis." Though the temporal arteries were not examined because of the absence of clinical signs and symptoms, we think that in the absence of any commoner cause of aneurysm and resultant rupture of abdominal aorta the underlying lesion was "giant cell aortitis."

The report of a case of giant cell aortitis in which death was due to rupture of the abdominal aorta and resultant severe sudden blood loss. Doctor Gupta is Pathologist at E. J. Myer Memorial Hospital and Assistant Professor of Pathology, School of Medicine, S.U.N.Y. at Buffalo. Doctor Bachrach is from the Departments of Pathology and Medicine, Memorial Hospital, Worcester.

It has been reported that giant cell aortitis may be associated with temporal arteritis and inflammation and medial destruction in arteries of similar caliber in other organs and tissues. Furthermore the quality of the changes appears to be the same.[3-9]

In the present case the lesion was found only in the abdominal aorta. The thoracic portion and arch of aorta and other medium-sized vessels in other organs were negative on microscopic examination.

Summary

A case of giant cell aortitis is described in which death was due to rupture of the abdominal aorta and resultant severe sudden blood loss.

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Slipped Capital Femoral Epiphysis: A Review

Case Reports

SLIPPED CAPITAL FEMORAL EPIPHYSIS is a disorder of the epiphyseal plate of the proximal femur in adolescent children, frequently producing displacement of the femoral head, leaving a significant number of children partially disabled and others facing early degenerative arthritis of the affected hip. We review the present knowledge of the disorder and present a small, but typical series. Emphasis is placed on the value of early recognition and definitive treatment.

ETIOLOGY

In view of the bony and muscular stability of the hip, traumatic separation of the capital femoral epiphysis was long thought impossible. The first authenticated case was recorded in 1867 by Brousseau.[1] Muller[2] in 1888 first described the condition translated as "bending of the neck of the femur in adolescence." He is credited as being the discoverer of *epiphyseal coxa vara*,[3] a term suggested by Hofmeister in 1894[4] and Kocher.[5] In 1898 Sprengle[6] showed conclusively that the deformity could result from traumatic separation of the capital femoral epiphysis.

Slipped capital femoral epiphysis is a disorder of the proximal femoral epiphyseal plate of unknown etiology. Experience at the University of Missouri Medical Center indicates that the final functional result depends to a large extent upon the amount of slipping of the femoral head occurring prior to diagnosis and definitive treatment. The authors conclude that cases of severe slipping require major operative procedures if satisfactory results are to be expected. Doctor Hunt is Instructor in Orthopaedic Surgery at the Medical Center. Doctor Austin is Associate Professor of Surgery and Chief of the Section of Orthopaedic Surgery. Mr. Wharton is a third year student at the School of Medicine. This study was supported in part by the Missouri State Crippled Children's Service.

In these early years slipped capital femoral epiphysis was thought to be either of traumatic etiology or to be an aberrant form of rickets. With our increasing knowledge of rickets and refinement of laboratory studies, rickets has mostly been abandoned as a possible causative factor. Trauma remains prominent as an etiological factor. If indeed trauma is not basic, it surely contributes to many cases even though other more subtle epiphyseal changes may have taken place earlier.

For many years it has been noted that obese, Frohlich type children and those going through a growth acceleration are more likely to develop the slipping. For these reasons endocrine dysfunction has been incriminated. In 1955 Harris[7] showed experimentally that growth hormone decreased the shearing strength of the epiphyseal plate and that estrogens increased the shearing strength of the epiphyseal plate. Hillman[8] has used stilbesterol in cases of early minimal slip and has hastened the closure of the epiphysis, thus preventing further slip. It remains to be proven that there is a basic endocrinopathy, but at present most investigators feel that there is a relative weakening of the strength of the epiphyseal plate during the rapid growth spurt of adolescence. In some individuals slight trauma is all that is required to produce an actual slipping of the epiphysis. In others with perhaps more severe trauma, there is gross slipping of the capital femoral epiphysis. There are some instances of severe slip wherein no history of even slight trauma is obtained.

CLINICAL FINDINGS

There are two major types of epiphyseal separations. The first is due to severe trauma without prior weakening of the capital femoral epiphysis. These cases present histories and findings similar to displaced femoral neck fractures in the adult. The other type of separation is termed idiopathic, although trauma of varying degree is superimposed. This group of patients presents with rather typical histories and physical findings and form the basis of our report.

There is almost always a history of pain, occasionally confined to the hip, but more often referred to the distal thigh and knee by way of the obturator nerve. The other most common finding is limp, associated with intermittent, mild pain over a period of some several months prior to diagnosis. There may be a symptom free period of several weeks followed by a recurrence of more severe symptoms. Usually within three to nine months the symptoms increase until medical attention is sought and diagnosis is made. Occasionally the onset is acute with severe symptoms leading to early recognition of the disorder. In bilateral cases several months may separate the onset of symptoms for each side. This emphasizes the need for careful assessment of the uninvolved hip in the unilateral case.

The insidious onset makes early diagnosis the exception. Our average duration of symptoms prior to diagnosis was eight months. On physical examination there is almost always a discernible limp. When the limp is moderately severe, a positive Trendelenburg sign is usually present. The patient stands with the leg in a position of external rotation with slight adduction, and there is a variable amount of permanent flexion, or at least loss of extension. The degree of deformity depends upon the amount of displacement of the capital epiphysis.[9] The patient may show a slight lumbar lordosis secondary to pelvic tilt. There is usually atrophy of the gluteal mass on the involved side. Moderate thigh and calf atrophy is present. There may be shortening of the involved extremity ranging up to 1½ inches. In the supine position the limb may be held in adduction, external rotation and slight flexion. Abduction and internal rotation are always sharply reduced and their limitation is one of the best diagnostic signs. Another characteristic finding is a tendency for the hip to externally rotate as it is flexed. Vital signs are normal and all laboratory studies are within normal limits.

Roentgenographic studies consisting of carefully positioned antero-posterior and frog-leg projections of the pelvis show typical findings and are essential to confirm the diagnosis. Before slipping occurs there is irregularity of the epiphyseal line with a varying degree of broadening. In the mild slip (less than one-third of the head displaced) the femoral head appears elongated in the vertical plane and the shadow of the head is crescent shaped. The lower, medial border of the head projects slightly as a beak-like process (resembling a jockey cap) extending beyond the lower margin of the femoral neck. The epiphyseal line shows a varying degree of broadening and irregularity and appears almost vertical. The acetabulum is normal and the joint space preserved. In the severe slip the head is markedly displaced and rotated, only the upper and anterior half remaining in the acetabulum. The articular surface of the head is directly inward, backward and downward.

CASE MATERIAL

Table 1 summarizes our experience with slipped capital femoral epiphysis. There were 13 patients with 16 involved hips treated during the period of 1953-1964. The shortest follow-up is 18 months except for one patient who is a bilateral case with bilateral subtrochanteric osteotomies. The case is included as a poor result, with the expectation that she could improve to a fair classification with time. The average follow-up is six years and four months. One follow-up was by letter questionnaire. All others have been recently evaluated by the authors.

There were nine males and seven females. The girls ranged in age from 11 years and 5 months to 16 years, with a 13 years and 1 month average age at onset. The males ranged from 12 years to 17 years and 5 months, with 14 years average age at onset.

Duration of symptoms prior to diagnosis ranged from 1 day to 2 years and 7 months, for an average of 8 months. Two patients had early, mild slips (less than one-third displaced), three had moderate slips (one-third to two-thirds displaced) and 11 had severe slips (greater than two-thirds displaced). All patients had operative procedures designed to meet their particular needs. Table 2 summarizes the operative procedures.

The rating system as proposed by Badgley[10] was employed. Those with less than 5°-10° loss in range of motion and with minimal shortening and no subjective complaints were rated excellent. Those rated good had 90° of flexion without contracture, at least 10° of internal rotation and no pain.

A fair rating was used for those with "good" results, but with minimal pain or fatigue with activity.

All others were rated poor if they had either less than 90° flexion, loss of internal rotation, contractures, severe limp, excessive shortening or pain.

TABLE 1

SUMMARY OF CASES

Case	Sex	Side	Age at Onset		Duration of sx.	Degree of	Treatment	Post-Op. Range of Motion			Short-ening in	Subjective	Gait	Roentgenographic	Result
			YRS.	MOS.	(Mos.)	Slip		FLEX.	INT. ROTAT.	ABD.	Inches	Complaints		Evaluation	
1.	M	L	14	3	2	Mild	Hagie pins	N	10°	N	0	Occasional "cramps" after excess exercise	N	Normal configuration femoral heads and acetabulae. Normal joint space	Good
		R	14	3	2	Mild	Hagie pins	N	15°	N	1¼				Good
2.	M	L	12	11	4	Mod.	Open reduction and graft (epiphysiodesis)	N	20°	30°	0	None	N	Shortening femoral neck, well contoured femoral head. Preservation of joint space	Good
3.	F	L	11	11	5	Sev.	a) Subtrochanteric osteotomy b) Revision of osteotomy	N	0	35°	¾	None	Mod. Limp	Severe coxa vara, flattening and irregularity femoral head	Poor
4.	M	R	12	2	1	Sev.	Open reduction and Knowles pins	N	10°	N	¾	None	N	Flattening femoral head. Overall good contour and preservation joint space	Ex.
5.	M	R	15	5	1	Sev.	Open reduction and Knowles pins	N	N	N	0	None	N	Fused epiphyseal line. Good joint space. No evidence avascular necrosis	Ex.
6.	F	R	11	5	31	Sev.	Osteoplasty (exostectomy)	N	25°	N	1¼	Occasional pain after excess exercise	N	Irregular femoral head with flattening. Irregular joint space	Fair
7.	M	R	12	0	10	Mod.	Open reduction and Knowles pins	N	N	N	1½	None	N	Shortening femoral neck, well seated head. Good joint space	Ex.
8.	M	L	15	3	0	Sev.	Open reduction and Knowles pins	25°	5°	25°	0	Gross functional limitation of motion	Waddle	Good general configuration at femoral head and joint space. Disuse osteoporosis	Poor
		R	15	5	0	Sev.	Subtrochanteric osteotomy	30°	5°	25°	⅓				Poor

9.	M	R	12	6	21	Sev.	Subtrochanteric osteotomy	N	0	30°	1¼	None	N	Solid osteotomy with good hip position and maintenance joint space	Good
10.	F	L	16	0	10	Mod.	Subtrochanteric osteotomy	65°	0	20°	0	Moderate pain severe limitation of motion	Waddle	Improvement in position of head	Poor
		R	16	0	10	Sev.	Subtrochanteric osteotomy	80°	0	15°	⅓				Poor
11.	M	R	17	5	7	Sev.	Closed reduction and Knowles pins	N	0	30°	1¼	Pain in knee	Mod. Limp	Early degenerative arthritis marked sclerosis and cyst formation	Fair
12.	M	L	14	5	1	Sev.	Open reduction and Knowles pins	10°	0	5°	3	Backache, severe limitation of motion	Sev. Limp	Avascular necrosis later mold arthroplasty	Poor
13.	F	R	13	0	10	Sev.	Osteoplasty (cervical wedge osteotomy prior to admission)	90°	5°	20°	½	Limitation of motion	Mild Limp	Avascular necrosis with pseudoarthrosis	Poor

TABLE 2

OPERATIVE PROCEDURES

Multiple pins in situ	2
Closed reduction and internal fixation with multiple pins	1
Open reduction and internal fixation with multiple pins	5
Open reduction and epiphysiodesis with bone graft	1
Subtrochanteric osteotomy	5
Osteoplasty (exostectomy)	2

RESULTS

There were three excellent, four good, two fair and seven poor results. Of the five patients with mild to moderate slips, only one had a poor result. The other six with poor results were all from the group of 11 with severe slips. The operation selected and performed had little apparent effect on the end results when compared with the degree of slip. This highlights the value of as early diagnosis as possible, hopefully catching the disorder before severe slipping occurs, thus improving the percentage chance for good and excellent results. As a general rule, those with early, mild slip were pinned *in situ* or had an epiphysiodesis. Those with moderate slip had either closed or open reductions with multiple pin fixation. In those with severe slips, if the epiphysis was closed, subtrochanteric osteotomy was performed. If the epiphysis was still open, either open or closed reduction with multiple pin fixation was used. The patients with fair results had sound operations and good early results, but at long term follow-up they had early traumatic arthritis.

Of the seven with poor results, four were rated poor on the basis of excessive limitation of motion. There was no other obvious contributory cause and their surgical procedures were considered to have been correctly carried out. Two of the poor results had loss of position of the fragments due to inadequate internal fixation. The other poor result was due to avascular necrosis of the femoral head necessitating a cup

TABLE 3

COMPLICATIONS*

Limitation of motion	9
Avascular necrosis	3
Loss of operative fixation and position	2
Early traumatic arthritis	2
Excessive shortening (over ¾ inch)	6
Thrombophlebitis	1
Infection	0

* Several patients with poor results had more than one of the above complications.

arthroplasty, which in turn has given poor results.

Table 3 summarizes the complications encountered in the entire series.

CASE REPORTS

Case 1. A 15½-year-old white male was first seen May 19, 1959 with pain in the right hip. Pain was first noted on April 10, 1959 while participating in a high school track meet. Diagnosis of slipped capital femoral epiphysis was made in May, 1959. The patient had had a tonsillectomy at age seven years and had been hospitalized at age 12 years for eczema. There was no history of other serious illnesses or prior trauma. There was no history of hereditary or familial disease. Physical examination revealed a well developed white male in no acute distress. Vital signs were within normal limits. His right leg was held in external rotation and it was 1½ inches shorter than the left. All laboratory studies were within normal limits. Roentgenograms (Fig. 1) showed severe slipping of the capital femoral epiphysis on the right with posterior displacement. On May 19, 1959 open reduction and internal fixation with three Knowles pins was accomplished. A plaster boot was applied and weight bearing was prohibited for eight weeks. Roentgenograms on September 15, 1959 (Fig. 2) showed fusion of the epiphysis, good joint space and no evidence of avascular necrosis. The patient has an excellent functional result and no subjective complaints. He has recently been inducted into the U. S. Army.

Case 2. A 14-year-old white male was first seen in the University of Missouri Medical Center on May 17, 1963 with pain in the right knee and hip. Pain had been first noted in September 1961 following football practice. The patient first sought treatment from his local doctor on July 28, 1962. A diagnosis of "knee injury with secondary lumbar spasm" was made. Treatment consisted of a one-quarter inch lift on the right shoe, manipulation of the lumbar spine and a knee brace. Pelvic traction was added later. Treatment failed to relieve pain and the limp became worse. On May 9, 1963 roentgenograms were made, and a diagnosis of slipped capital femoral epiphysis was made by a radiologist. The patient was referred to the University of Missouri Medical Center for treatment. Past history consisted of the usual childhood diseases without sequelae. There was no history of serious illness or other trauma. No history of herditary or familial disease was elicited. Physical exam revealed an obese white male in no acute distress. Height was 56½ inches, weight 164 pounds. Vital signs were normal. Laboratory studies were within normal limits. Physical examination showed the right knee held in flexion with gross limitation of internal rotation and abduction of the hip. Roentgenograms (Fig. 3) showed severe slipping of the capital femoral epiphysis. On June 3, 1963 a biplane subtrochanteric osteotomy after the method of Southwick[11] was performed (Fig. 4). Immobilization consisted of a hip spica cast. The postoperative course was complicated by thrombophlebitis, which responded to anticoagulant therapy. Immobilization was maintained for six weeks, followed by six weeks of partial weight bearing. Roentgenograms of November 1964 (Fig. 5) show solid union of the osteotomy site with improvement in position of the femoral head in the acetabulum. Range of motion (Fig. 6) is excellent, but a three-quarter inch heel lift is still required to level the pelvis. There are no subjective complaints and the patient played first team football in high school during the 1964 season.

Case 3. An 18-year-old white male was first seen at the University of Missouri Medical Center July

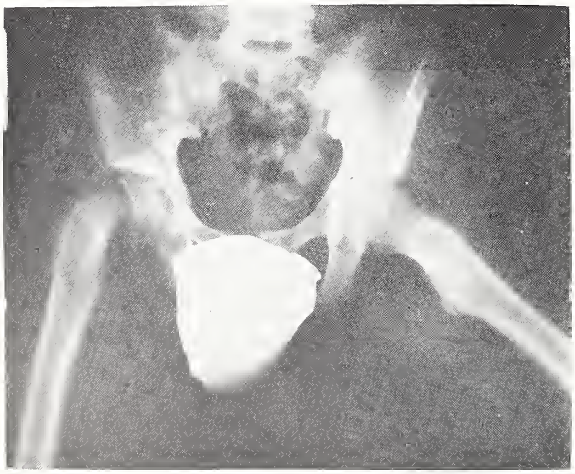

Fig. 1 Preoperative roentgenogram in Case No. 1 showing severe postero-medial slip of the right capital femoral epiphysis.

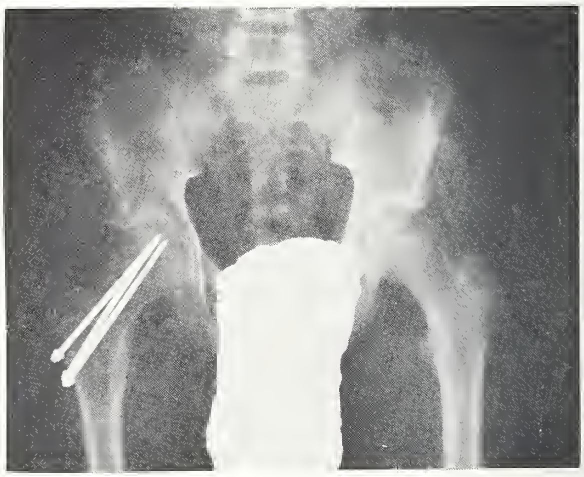

Fig. 2 Postoperative roentgenogram in Case No. 1 showing closure of the epiphyseal line. The femoral head is reduced to its anatomical position.

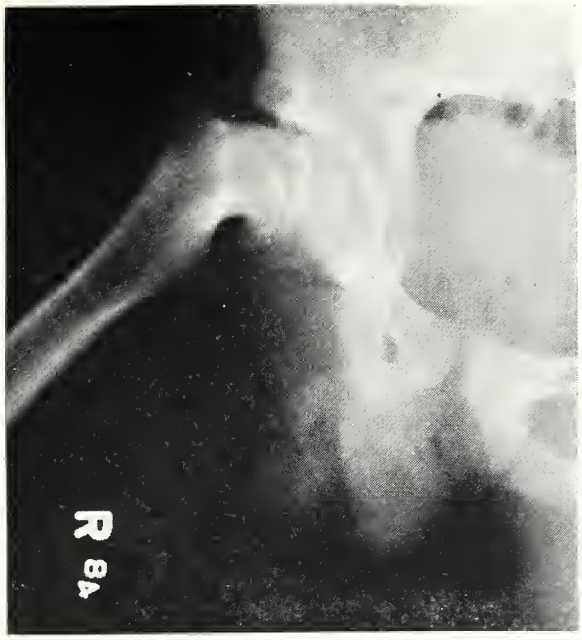

Fig. 3 Preoperative roentgenogram in Case No. 2 showing severe slip of the right capital femoral epiphysis.

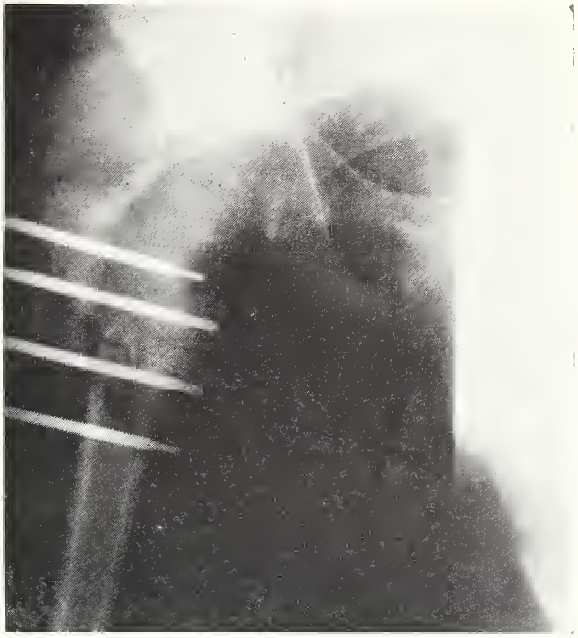

Fig. 4 Postoperative roentgenogram in Case No. 2 showing a subtrochanteric osteotomy with correction. The method of pin fixation is demonstrated.

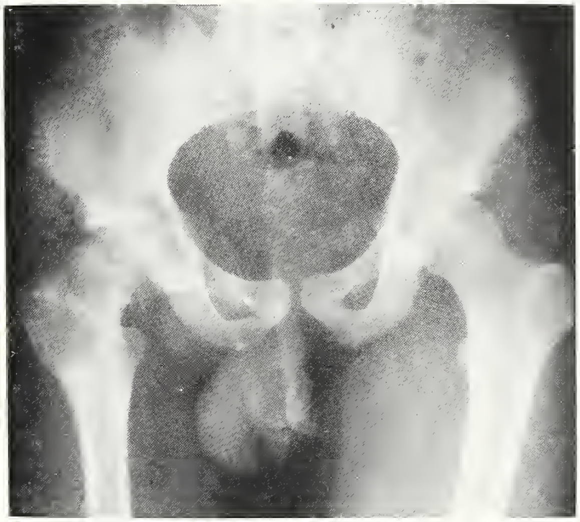

Fig. 5 Postoperative roentgenogram in Case No. 2 showing union of the osteotomy and improvement of position of the femoral head after removal of internal fixation.

31, 1962 seven months after a fall which produced pain in the right hip and knee. The pain subsided after a "few days" bed rest, but recurred intermittently. On July 29, 1962 the patient's right leg "gave way" with a resultant fall. He had immediate right hip pain and was unable to bear weight. Roentgenograms by his local physician established the diagnosis of slipped capital femoral epiphysis. Past history revealed the usual childhood diseases without sequelae. There were no other serious illnesses or injuries. There was no history of familial or hereditary disease. Physical examination revealed a well developed white male in no acute distress. Vital signs were normal. The right lower extremity was held in external rotation. There was gross limitation of motion of the hip in abduction and internal rotation. Laboratory studies were within normal limits. Roentgenographic examination (Fig. 7) confirmed the diagnosis. On August 2, 1962 a closed reduction and internal fixation with Knowles pins was accomplished. The postoperative course was benign, and weight bearing was permitted on October 30, 1962. The Knowles pins were removed April 16, 1963. Roentgenograms (Fig. 8) on January 22, 1965 show sclerosis of the acetabulum and femoral head with cystic degeneration of the acetabulum. The patient now has a mild limp and occasional knee pain. There is marked loss of internal rotation and abduction. There is one inch of shortening in the right femur.

DISCUSSION

We agree with the leading authorities on slipped capital femoral epiphysis and adhere to the generally accepted guidelines to treatment. The factor which stands alone as the single greatest influence on the eventual result is the degree of slipping at the time the child is brought to treatment. Those fortunate enough to have early, mild slips will usually respond to relatively conservative treatment. The goal in

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The significant pharmacologic action of Lomotil are summarized as follows

Evidence indicates that Lomotil act directly on the intestinal musculature t inhibit excess peristalsis.

Lomotil is not known to inhibit nonpropulsive intestinal movements.

Roentgenograms demonstrate that thi activity occurs within two hours afte oral administration and persists for a least six hours.

Comparative studies in the rat sho Lomotil to be more effective in inhibiting fecal excretion than either codein or morphine.

Analgesic, anticholinergic, mydriati and gastric secretory effects have no been significant.

Reduction of propulsive motility wit Lomotil relieves spasm and cramping allows physiologic absorption of flui and reduces frequency of evacuations t provide prompt, symptomatic control o virtually all diarrheas.

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Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride .... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate .... 0.025 mg.

tablets • liquid

slows propulsion

relieves distress

stops diarrhea

Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:
20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

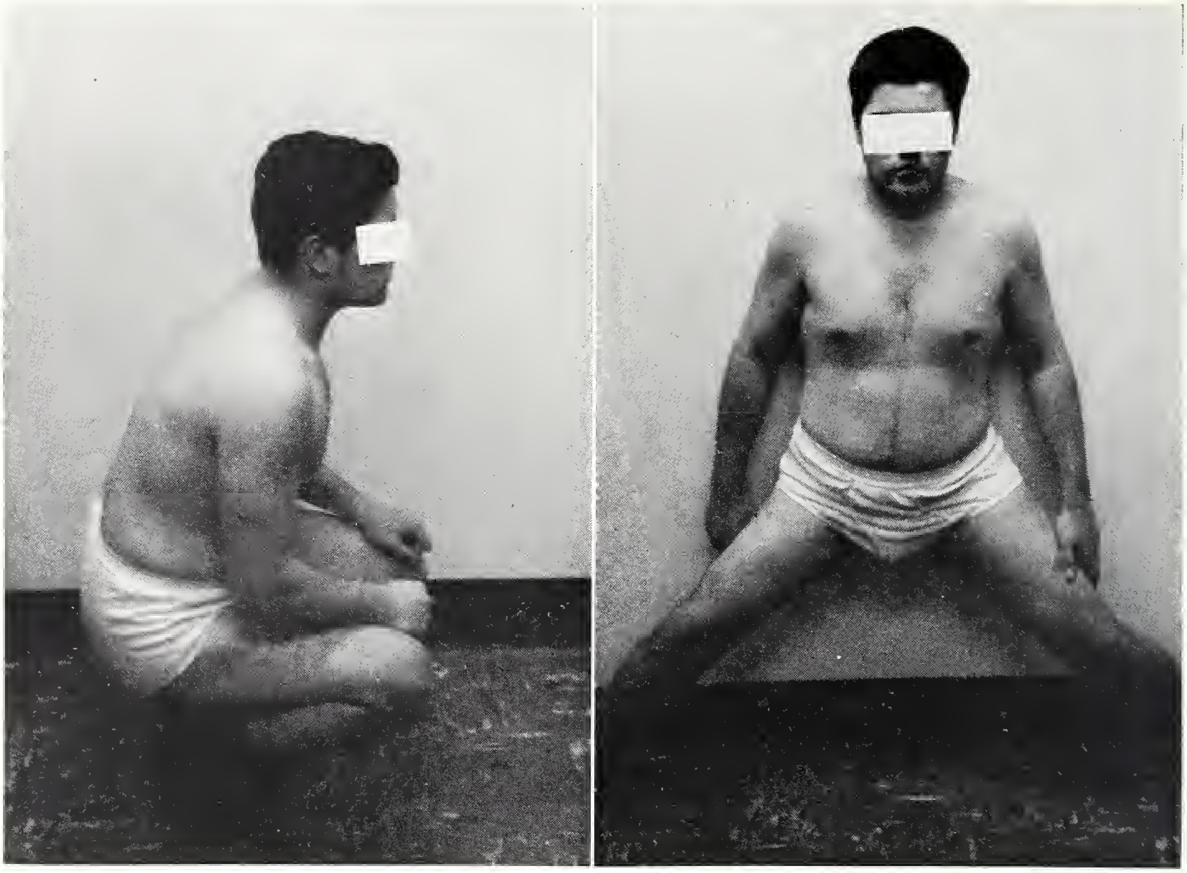

Fig. 6 Postoperative photographs in Case No. 2. (l) Demonstration showing hip flexion to 90° in a full knee bend. (r) Demonstration showing wide abduction.

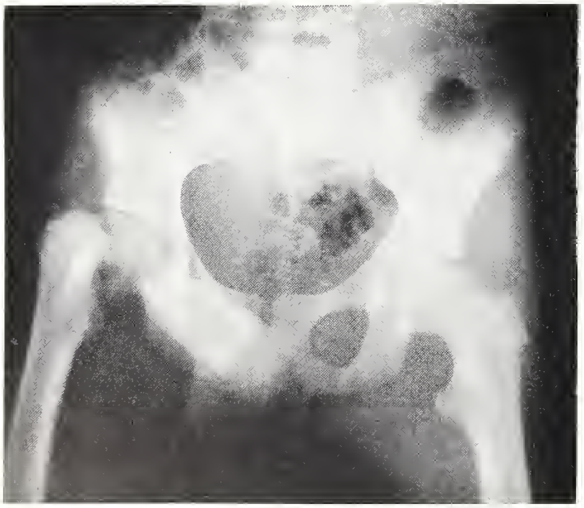

Fig. 7 Preoperative roentgenogram in Case No. 3 showing severe slip of capital femoral epiphysis of right hip.

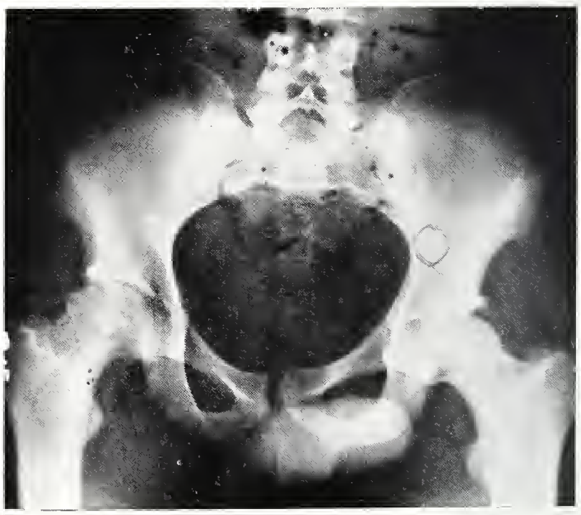

Fig. 8 Two year follow-up roentgenogram of right hip in Case No. 3 showing sclerosis, irregularity and cystic degeneration.

these cases is to effect fusion of the capital femoral epiphysis with the least chance of further slipping and damage to the blood supply to the hip. This is usually accomplished by insertion of multiple small pins across the epiphyseal line and into the femoral head. This procedure enhances rapid fusion and provides internal fixation while fusion is being accomplished. Hormonal therapy will no doubt be further clarified in the future. In hormonal treatment however, non-weight bearing is essential until fusion occurs. Operative fusion with bone grafting is reported, but must add to the hazard of interruption of the blood supply. Immobilization in hip spica casts with the hip in abduction and internal rotation is effective, but many months may be required for spontaneous fusion, especially in the younger children.

In the moderate and severe slips deformity is already present and is rarely acceptable. The guideline to treatment must involve both correction of the deformity and preservation of the blood supply in the femoral head. In those severe slips where fusion of the epiphysis has already occurred some form of subtrochanteric osteotomy is ideal to correct the deformity and yet not endanger the blood supply. The decision is much more difficult in those with severe slips and with the epiphyseal line still open. If the slip is old, subtrochanteric osteotomy would seem to be the safest procedure. When the slip is fresh however, it is very tempting to reduce the hip by either open or closed reduction and then effect internal fixation. From an architectural viewpoint this is no doubt the very best solution, but any reduction of the severe slip carries with it the possibility of a disastrous interruption of the blood supply. Gentle manipulation or gentle traction may be justified to see if reduction can be easily accomplished. This failing, more vigorous reductive manipulation, or open reduction may be undertaken but they carry an increased hazard. Published results of various techniques for operative reduction indicate little risk of disturbance of the blood supply, but similar results have been difficult to obtain by the average surgeon. The subtrochanteric osteotomy, on the other hand, is a procedure that can be carried out by qualified orthopaedists, carries very little morbidity, and does not jeopardize the blood supply to the femoral capital epiphysis.

SUMMARY

Slipped capital femoral epiphysis is a disorder of the proximal femoral epiphyseal plate of unknown etiology. The experience gained at the University of Missouri Medical Center during the past ten years indicates that the final functional result depends to a large extent upon the amount of slipping of the femoral head occurring prior to diagnosis and definitive treatment. Those cases exhibiting mild slipping are the most easily managed and carry with them the best prognosis for fusion of the epiphysis, preservation of the joint space, survival of the femoral head and maintenance of normal biomechanics of the hip joint. Those with severe slips must have major operative procedures if satisfactory results are to be expected, and they carry a much greater risk of loss of motion, shortening, avascular necrosis of the femoral head, and major alteration in joint biomechanics.

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Cardiac Rhythm Disorders During Anesthesia

NUMEROUS ARTICLES HAVE BEEN PUBLISHED describing changes in cardiac rhythm during induction of anesthesia, particularly during intubation of the trachea.[1–5] The purpose of this study has been to observe and record the cardiac rhythmicity during induction of general anesthesia and to determine, if possible, the precise event during anesthesia and the type of anesthesia with which such disorders occurred.

METHOD

A continuous record of the electrocardiogram was made by utilizing a radio transmitter[6] with a bipolar chest lead with the negative electrode attached just below the clavicle to the right of the sternum and the positive terminal placed in the left posterior axillary line two inches below the tip of the scapula.[7] The signal from the transmitter was received by an FM tuner which was connected to an oscilloscope for visual monitoring. The electrocardiogram signal was simultaneously modulated to allow recording by magnetic tape. The electrocardiogram could thus be reviewed later by replay of the tape recording and appropriate segments recorded on paper by a conventional electrocardiograph (Fig. 1).

Recording of the electrocardiogram was begun immediately following pre-medication and prior to the beginning of anesthesia. It continued throughout the induction phase of anesthesia but was discontinued at the beginning of the operative procedure. The exact time of each event was noted by the use of a stopwatch. At periodic intervals the elasped time was recorded on the magnetic tape, thus allowing precise comparison of the electrocardiogram to anesthetic events. A specific notation of elapsed time was made for the following events:

1. The administration of each anesthetic.
2. The removal of the mask from the patient's face.
3. Laryngoscopy.
4. The passage of the endotracheal tube between the patient's vocal cords.
5. The first delivery of oxygen to the patient's lungs after intubation.

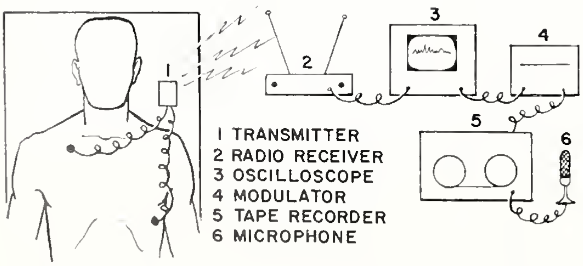

Fig. 1 Diagram of system employed for continuous recording of the electrocardiogram during anesthesia.

Patients were selected at random from those coming to surgery. They ranged in age from 17 to 79 years with a mean age of 47 years. The "anesthetic risk" ranged from very good to very poor. Preoperative electrocardiograms were available for reference in the majority of patients.

Induction of anesthesia was routinely accomplished with thiopental followed with cyclopropane, or nitrous oxide and halothane until the patient was sufficiently relaxed for endotrachael intubation. All patients were apneic during the maneuvers of endotracheal intubation.

RESULTS

Forty patients were observed, and in all but four instances some type of cardiac rhythm disturbance was recorded (Table 1).

One-half of the patients developed a ventricular arrhythmia. Eighty-five per cent of these occurred during laryngoscopy, endotrachael intubation, or within three minutes following intubation (Fig. 2). Occasionally isolated premature ventricular contractions were seen just prior to endotrachael intubation. There was no consistent relationship between the onset of the arrhythmia and the various maneuvers of endotracheal intubation which is in agreement with the observations of others.[1] Ventricular arrhythmias appeared more often in older people and were observed in three-fourths of subjects over 50 years of age.

A wandering atrial pacemaker was the second most frequent arrhythmia, appearing in 45% of the cases. It occurred at various times through-

TABLE 1

Total Cases Monitored	*Number of Cases* 40	*Per Cent of Cases* 100
Number with cardiac arrhythmia	36	90
Ventricular arrhythmia	21	53
a. bigeminy	14	
b. ventricular tachycardia	4	
c. isolated premature ventricular contractions	3	
Wandering atrial pacemaker	18	45
Sinus tachycardia	17	43
ST-T wave abnormalities	15	38
Sinus bradycardia	10	25
Supraventricular tachycardia	4	10
S-A block with nodal escape	1	3

out induction of anesthesia, appearing somewhat more often with endotrachael intubation.

No attempt was made to correlate the appearance of arrhythmias with the depth of anesthesia, but they were noted to occur in all phases.

Upon completion of the study, the patient's hospital record was reviewed to determine whether or not objective evidence of organic heart disease was present prior to anesthesia as determined by the electrocardiogram, physical examination, and chest roentgenogram. Seventeen subjects were judged to have evidence of organic heart disease prior to anesthesia, while 19 had no detectable cardiac abnormality. Of those with proven heart disease, 59% developed a ventricular arrhythmia as compared to 42% of those without demonstrable cardiac abnormality. There was likewise no significant difference in the incidence of supraventricular arrhythmias in the two groups.

DISCUSSION

Numerous factors may come to bear in the production of cardiac rhythm disorders during general anesthesia. Variables ranging from preoperative patient apprehension with fear of death to a decrease in arterial tension of carbon dioxide (pCO_2), makes precise definition of the cause of a specific rhythm disturbance very difficult. The present study confirms the prevailing opinions that the procedure of intubation and the events preceding and following it possess a distinct tendency to cause a disturbed cardiac rhythm. Whether the mechanisms are due to hypocapnea, hypoxia, or reflex vagal stimulation, remains speculative.

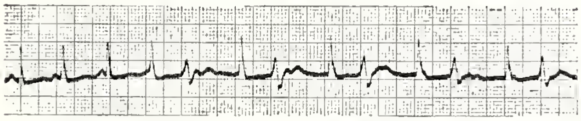

Fig. 2 Electrocardiogram, 23-year-old Negro female, 30 seconds after endotracheal intubation. No evidence of organic heart disease. NOTE: Wandering atrial pacemaker and bigeminy.

Until all of the various factors involved in the production of cardiac arrhythmias during anesthesia are better defined, it would seem prudent to stress the importance of visual cardiac monitoring of patients receiving general anesthesia. The knowledge that any disturbance in cardiac rhythmicity, regardless of the cause, may predispose to ventricular fibrillation or cardiac arrest is sufficient to justify the cost of cardiac monitoring equipment for use in the operating room.

SUMMARY AND CONCLUSIONS

The electrocardiogram was continuously recorded in 40 patients prior to and during induction of general anesthesia. Ninety per cent developed some type of cardiac arrhythmia. Over half (53%) of the arrhythmias were of ventricular origin, the majority of which consisted of premature ventricular contractions which were occasionally of multifocal origin. Arrhythmias most often occurred during the maneuvers of endotracheal intubation or within three minutes afterward.

(Continued on page 687)

The frequency of rhythm disturbances of the heart during general anesthesia is quite high. This fact has long been recognized but often ignored since the disturbances are usually transient. The study which is reported here was performed in an effort to clearly identify the types of rhythm disturbance and to correlate them with specific anesthesia events. Mr. Wheeler is a second year student at the M.U. School of Medicine and a Summer Research Fellow of the Missouri Heart Association. Mr. Corwin is a fourth year medical student. Doctor Martt is Associate Professor in the Department of Internal Medicine and Director of the Heart Station at the Medical Center.

E. G. HAMILTON, M.D. *and* **L. A. PILLA, M.D.,** *St. Louis*

Intrauterine Transfusion of Erythroblastotic Fetus

Case Report

This is a case report of the successful treatment of the baby of a severely immunized Rh negative patient by intrauterine fetal transfusions according to the method of Liley.[1-3]

Case Report

The mother, a 27-year-old white grav V, para IV, delivered a living male infant about term in 1958. Her second child, a female, delivered at about eight months after spontaneous onset of labor, required an exchange transfusion on the third day. In 1961, after spontaneously starting labor at about eight months, she delivered a 1200 gm. male who lived one-half hour. In 1962 her fourth child, delivered at 37 weeks following the second induction attempt, was an hydropic female weighing 2750 gm. The infant never cried but received an exchange transfusion and was kept alive for four hours on intratracheal oxygen. The cord blood was type A, D+, Coombs+, RBC 0.74 million, Hematocrit 12 vol.%, Hemoglobin less than 4 gm., bilirubin total 3 mg.%, reticulocyte count 31.4%. In the third month of pregnancy the indirect Coombs titre was 1:256. Autopsy confirmed the typical findings of an hydropic erythroblastotic infant.

During the last pregnancy she gave her L.M.P. as April 8, 1964 but on August 7 she seemed only 2½ to 3 months pregnant. Mild vaginal bleeding was noted August 22 to 24. On September 4, the McDonald measurement was 8 cm. and on September 25 the fetal heart tones were first heard. It was then estimated that her E.D.C. was probably about February 14, 1965.

On November 6 she reported that fetal movements had decreased during the previous weeks. An amniocentesis was done November 11 but the fluid show no optical density elevation in the 450 mμ wave length, probably due to bilirubin, which would indicate fetal involvement.[6, 7]

The husband was type A with a probable genotype of CDe/cDE which was supported by the fact that one of the living children was found to be type A, CDe/cde and the other, type A cDE/cde. The maternal antibodies were against D.

After collecting a 5 cc. specimen by amniocentesis, 25 ml. of 75% Hypaque was injected into the amniotic sac. An A.P. X-ray film of the abdomen an hour later showed the amniotic sac nicely outlined with evidence of the placenta located on the right side of the uterine fundus. There was no evidence of hydrops since the fetal scalp appeared about 2 mm. thick while the soft tissue over the posterior portion of the ribs measured about 6 mm.

Upon re-admission, November 17, amniocentesis provided 4 ml. of murky yellow fluid with increased optical density over that of the previous specimen with an elevation peaking at 450 mμ. The Hypaque injected a week earlier was well concentrated and readily visualized in the fetal gut.

Because of the past history, the husband's homozygosity for D, and the 3 plus changes in the optical density curve of the amniotic fluid, the fetus seemed certain to be seriously involved.[6-8] On November 18, at 27½ weeks, an intra abdominal infusion of 55 ml. of packed O, Rh neg. red cells, compatible with the mother, was given to the fetus. At this time the fetal heart rate dropped to 85/min. so no more volume was added. In three minutes the fetal heart rate was up to 120 and soon afterward increased to 180/min., where it remained for an hour, coming down to 140/min. Before removing the catheter, 3 ml. of Hypaque and 5 ml. of air was injected to verify the location of the catheter. An X-ray film taken to provide an A.P. view of the fetus showed excellent outlining of the abdominal cavity and the diaphragm.

On December 2 at 29½ weeks the patient was re-admitted, and 100 ml. of packed red cells, the same type as before, were transfused with no change in the fetal heart rate. There was no opaque material in the bowel and three attempts were required to enter the fetal abdomen. Following the infusion and verifying the location of the catheter, 15 ml. of 75% Hypaque was injected into the amniotic sac in anticipation of the next transfusion. The fetal heart rate was 173/min. immediately following the transfusion. The maternal Hb was 12 gm. and Ht. 36 vol.%.

On December 10 the mother was aware of quite strong Braxton-Hicks contractions followed the next day by a sudden gush of blood stained fluid. The McDonald measurement was 24 cm., FHT, 136 RLQ, head about station +1, the cervix was 2 cm. long and closed. During the next few hours a small amount of blood tinged fluid was passed. The Hb was 11.8 gm. so a unit of A. neg. blood was given the mother against possible future hemorrhage. The patient was admitted December 11 and discharged December 12 with Hb of 14.4 gm. and Ht. of 39 vol.%. She was instructed concerning local vaginal hygiene and given Furacin vaginal suppositories to be used 1. H.S.

The patient was re-admitted the morning of December 22 at about 32 weeks, and the baby was transfused that afternoon with 105 ml. packed O neg. cells. The fetal bowel was well visualized 20 days after administration of the Hypaque. The blood was given over a period of one hour, the FHT being 180/min. at the start and completion of the procedure. The balance of 250 ml. of packed cells was given to the mother. The McDonald measurement the following morning was 26 cm., FHT 136/min. in the RLQ. She continued to have a serous blood-tinged vaginal discharge. Mysteclin F. 250 mg. q six hours for 12 doses was prescribed and the patient discharged December 23.

The night of January 3, 1965, the patient had stopped all but a clear serous drainage, but following a night out with her husband she had a sudden gush of blood which she thought could be as much as 200 ml. She was admitted January 4 with a bright red vaginal discharge which responded well to bed rest. The fibrinogin level was 310 mg.%, Hb 12.7 gm., Ht. 38 vol.%. She was discharged January 7.

In the office January 11 she reported some resumption of mild vaginal bleeding since leaving the hospital and a marked decrease in fetal movements since January 9. The McDonald measurement was 26.5 cm., the head at station +2 and the cervix was 1 cm. dilated and well effaced.

She was admitted at about 35½ weeks on January 12 and easily induced with an I.V. Syntocinon drip. After four hours a living male infant weighing 1700 gm., Apgar 9, was delivered spontaneously. The cord blood Hb was 8.8 gm., Ht. 24 vol.%, bilirubin 1 min. 2 gm.%, total 6.9 mg.% reticulocyte count 0.2%. The Coombs test was negative on the cord blood which typed out O neg. A slide preparation revealed 95% adult type cells. The spleen was palpable 3 cm., and the liver 4 cm. below the ribs. An area of necrosis 5 x 10 mm. was noted in the skin of the left cheek.

The baby was immediately started on an exchange transfusion using fresh type O, Rh neg. citrated blood compatible with the mother. After 250 ml. had been exchanged in one hour, the baby developed a cardiac arrest. Immediate external cardiac massage re-established a normal regular beat in two minutes. The transfusion was stopped at this point.

The following day the baby was active, alert and had good sucking action. At 18 hours post-exchange the total bilirubin was 13 mg.%, indirect 11 mg.%.

On January 14 the baby was lethargic with a high pitched cry. The indirect bilirubin was 19.5 mg.%, total 21.5 mg.%. A second exchange of 430 ml. of O, Rh neg. blood was tolerated well, following which the bilirubin was 8 mg.% total, Hb 17.7 gm., Ht. 40 vol.%. The following day the bilirubin peaked at 15 mg.% total and gradually decreased. By January 18 the weight had dropped to 1500 gm. with evidence of dehydration which was improved by hypodermoclysis. The subsequent course was uneventful with rapid weight gain on a 40 cal./oz. formula. By February 7 the weight was 2260 gm. and the Hb was 8 gm., so a transfusion 40 cc. packed A neg. blood cells was given which raised the Hb to 17 gm.

The report of the successful treatment of an A, Rh positive baby of a severely isoimmunized Rh neg. mother. The authors believe this is the first published case history in this area involving intrauterine transfusion for erythroblastosis, and therefore should be of interest to area physicians. Doctor Hamilton is Chief of Ob-Gyn, St. Mary's Hospital, and Assistant Professor of Clinical Ob-Gyn, St. Louis University School of Medicine. Doctor Pilla is Radiologist, St. Mary's Hospital, and Senior Instructor in Radiology, St. Loius University School of Medicine.

The mother's post partum course was uneventful and she was discharged home on January 17.

DISCUSSION

It would seem obvious that, for the present, the procedure should almost exclusively be reserved for those patients who happen to become pregnant when the husband is homozygous positive and the previous baby was fatally involved. Such a patient, when not pregnant, should have the most compelling desire for a child, emotional stability and complete understanding of the hazards and pitfalls before such treatment for another child is offered.

In addition to the obvious potential danger of maternal or fetal hemorrhage from an unfortunate needle puncture, the possibility of amniotic fluid embolism must be recognized. Reid cites the commonly accepted route as involving rupture of membranes somewhere in the upper segment of the uterus with eventual escape through the uteroplacental site. The presence of needle puncture sites plus the use of medical induction for early establishment of labor provides a potentially dangerous situation for the mother.

Injection of viscid 75% Hypaque in the amniotic sac through a 20 gauge spinal needle presents some danger. If the syringe is attached directly to the needle, the tip of the needle may wander due to the great amount of pressure required, hence, a piece of flexible tubing should be interposed. A more dilute contrast medium (50%) can also be used. If the material is injected into the tissues an ulcer may result.

Severely sensitized patients with the pseudotoxemic state may have a history of fetal hydrops as early as the 22nd to the 24th week.[4] To save the babies, one might have to give the first transfusion of packed cells prior to this time. It is possible that by maintaining an adequate number of functional red cells in the fetus, the compensatory placental changes and attendant maternal pseudotoxemia may be decreased or eliminated. In such cases an indwelling catheter would be the method of choice.[5] In my experience such patients have infrequently been obese and are usually slender, a coincidence that is helpful technically. In obese patients the implanting of catheter by laparotomy might be justified, although this adds the possibility of cord entanglement as frequently occurs with monamniotic twins. At this extreme end of the spectrum, even intrauterine transfusion is usually unsuccessful.

The amount of radiation exposure naturally is of concern. However, it is only a potential danger as compared to the otherwise certain demise of the fetus without intrauterine transfusion.

In analyzing the procedure, there are certain minimum roentgenograms and fluoroscopies necessary. Initially, it would seem unnecessary to obtain an abdominal film at the first amniocentesis at which time the contrast material is instilled. On the following day, just before the transfusion and after the mother has been lying supine on the X-ray table to allow the fetus to settle, antero-posterior and across-table transabdominal views are obtained with lead markers on the abdominal wall of the mother. These markers assist in externally relating the fetus whose intestines by now have become opacified by the ingested amniotic contrast material. Locating the fetal abdomen is made easier by placing, under fluoroscopy, using an image intensifier (low radiation dosage), the tip of a sterile opaque object (long needle) directly over the fetal abdomen. Even then the initial two films before fluoroscopy actually decrease the over-all radiation exposure since the opacified fetal intestines, which often overlie the dense maternal bones, are more readily located. Steadying the fetus with slight manual pressure on each side of the uterus is helpful when introducing the needle into its abdominal cavity.

After the needle is inserted and it is felt that the peritoneal cavity of the fetus has been entered, contrast material is then injected. (3 cc. of 50% Hypaque is adequate.) The location of the contrast material can be quickly checked by the fluoroscope rather than taking time to obtain films. Contrast material in the peritoneal cavity has a rather typical appearance showing the "digitations" or "scalloping" due to the inestines. Even the liver shadow may be visible. The final check of the catheter position before the transfusion, however, should be done by additional X-rays taken perpendicular to each other, that is, an antero-posterior and transabdominal view.

Summary

This is a report of the treatment of an A, Rh positive baby of a severly isoimmunized Rh neg. mother by the intrauterine transfusion of concentrated type O, Rh neg. erythrocytes in 55, 100, and 105 ml. amounts at 27½, 29½ and 32 gestational weeks, respectively. The baby was delivered vaginally following medical induction at 35½ weeks. Immediate exchange transfusion of 250 ml. and another of 430 ml. two days later was followed by survival and apparently normal development to date. There were no serious maternal complications evident due to the procedure.

Addendum

Before leaving the hospital the baby was observed to have bilateral inguinal hernias. Strangulation on one side forced earlier than anticipated repair on April 1, 1965.

Pre-operatively, March 31, the blood was found to be Type A, Rh pos., Hb 9.6 gm., Ht. 26 vol.%. He was given 75 ml. of blood and withstood surgery well. The surgeon remarked that there was an "unusual granularity and thickening," of the peritoneum lining the hernial sacs.

Dr. Friesen[9] has observed such hernias in a number of instances and considers the possibility that the intra-abdominal injections may prevent normal closure of the sac.

(Continued on page 687)

WILLIAM T. NEWTON, M.D., *St. Louis*

Current Status of Renal Allotransplantation

Destructive kidney disease kills over 100 people in Missouri each year. The carnage is particularly tragic since the diseases so frequently strike the young, those in their productive years, those with responsibilities for families of young children. In recent years two approaches to salvage of these lives have been developed. Development of permanent plastic arteriovenous shunts has allowed repetitive hemodialyses to remove uremic wastes. The technique is extraordinarily expensive, and only a few patients can be accommodated by even the largest of medical centers. Nevertheless, the procedure holds promise for future improvements and simplifications. The second approach has been developed due to the discovery that it is possible to suppress the immune reaction of some individuals to a graft of a healthy kidney from another individual, an allotransplant. Since the lay press has so dramatized and magnified advances in this area, it seemed appropriate to present an objective review of the current status of renal allotransplantation to the Missouri medical community. It is not the purpose of this paper to review background transplantation biology. A recent scholarly comprehensive review[1] is available as well as a recent more didactic and concise review.[2]

Clinical Material

The raw data analyzed here were obtained from the report of 522 renal transplants in 495 individuals compiled as of September 15, 1964, by the Human Kidney Transplant Registry supervised by Dr. Joseph E. Murray in Boston. The Registry is supported by the National Academy of Sciences—National Research Council with the purpose of collating detailed data on all cases of renal transplantation by transplantation teams throughout the world. The data in this compilation were obtained from 37 transplantation groups from the United States, Germany, Japan, Belgium, Great Britain, France, and Canada. The data are made available to the individual cooperating groups semi-annually by Dr. Murray and the biomedical mathematics team at Harvard.

The raw data were treated to develop accumulative survival tables according to the method of Cutler and Ederer.[3] The life survival analysis method uses recently obtained data only in its proper time interval. It avoids the erroneous optimism of statements such as "268 of 454 cases surviving up to nine years" and the weighted pessimism of "only 24 of 454 cases surviving longer than two years" that could be made from this data. Both statements are meaningless. A representative table that covers the entire body of data on primary allotransplants is shown in Table 1. Similar individual tables for various subgroups by donor source were prepared, and the statistical standard errors of the subgroups were

TABLE 1

Accumulative Survival of Renal Allografts*

Interval (Months)	*Number Cases at Risk*	*Number Failing*	*Number Functioning*	*Number Withdrawn Due to Time*	*Effective Number at Risk*	*Proportion Failing*	*Proportion Functioning*	*Accumulative Survival Rate*
0-1	454	186	268	11	449.5	.414	.586	59%
1-3	257	57	200	15	249.5	.229	.771	45%
3-6	185	16	169	34	168	.095	.905	41%
6-9	135	4	131	39	115.5	.035	.965	40%
9-12	92	3	89	33	80.5	.037	.963	38%
12-15	56	2	54	13	49.5	.040	.960	36%
15-18	41	2	39	5	38.5	.052	.948	35%
18-21	34	2	32	5	31.5	.063	.937	32%
21-24	27	3	24	6	24	.125	.875	28%

* Exclusive of 33 monozygotic twin transplants and of eight transplants for whom survival data are not shown.

A statistical analysis of data from the Human Kidney Transplant Registry concerning 522 transplants in 495 persons. The information indicates that a person receiving a kidney transplant has only a 25 to 30% chance of surviving two years, a graphic demonstration that renal allotransplantation is, for the present at least, a highly experimental procedure. The author comments on the many factors which should be considered before such procedure is undertaken. Doctor Newton is an Associate Professor of Surgery at Washington University School of Medicine and Chief of Surgery at the John Cochran V.A. Hospital.

calculated. A life survival graph of five subgroups divided by kidney donor source is presented in Fig. 1.

The group of monozygotic twins (33 cases, line A) is presented for reference. Although the graph is concerned with two year survival, there are monozygotic twin donor transplants surviving as long as nine years. Theoretically, this group should have the best results, as there is no antigenic incompatibility. This group of patients does not receive immuno-suppressive therapy and, paradoxically, may suffer a high late incidence of the original autoimmune glomerulonephritis in the transplant as a result.

The group from mother donors (103 cases, line C) is presented separately, as there is theoretical ground to expect that this would be the best donor group. However, there is no statistical separation between the mother donor group and the group of sibling donors (89 cases, line B) or the father donors, not shown in the figure. In fact, the results with sibling donors are slightly better than those with mother donors. One person that received a graft from a dizygotic twin survives six years after transplantation.

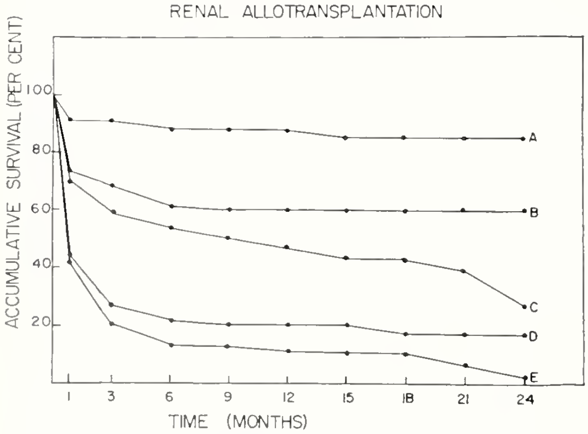

Fig. 1 Life survival graph on five groups of patients receiving kidney transplants. Group divisions are based on donor sources: (A) monozygotic twins; (B) siblings; (C) mothers; (D) cadavers; and (E) unrelated living donors.

There is a definite statistical difference between the genetically related donors (lines B & C) and the unrelated donors, whether from living (77 cases, line E) or cadaver (142 cases, line D) sources. There is no statistical difference between the cadaver donor group and the living unrelated donor group, composed of volunteers, spouses or normal kidneys sacrificed for Manson procedures or other operations. The differences in survival of the various groups appears in the first three months.

There appears to be little difference in the slope of the lines, the *rate* of graft failure, after the first three months. From the graph it is apparent that an individual has about an 85% chance of living two years if the graft is from his identical twin, about 50% probability if the graft is from a closely related donor, and about 20% chance if the graft is from an unrelated donor.

Sufficient experience has been accumulated in renal transplantation to set up certain guidelines regarding the criteria for donors and recipients selected at present.

Criteria for recipients:

1. **End-Stage Renal disease beyond the control of medical treatment. The creatinine clearance should at least be lower than 5 ml per minute. Under proper conservative treatment many individuals in uremia may lead restricted but useful lives for one, two, or more years.**
2. **Absence of sepsis. These individuals, under immuno-suppressive therapy almost invariably die.**
3. **Age, less than 40, and preferably less than 35. Older patients do not tolerate the insults of this procedure.**
4. **Ability to tolerate prolonged hospitalization and the other anxieties relevant to this procedure.**
5. **Evidence that costs will not destroy the economic stability of a surviving family.**

Use of cadaver kidneys evades the ethical question of possible injury to a living donor but raises other questions. The best preservation techniques demand that the kidney be transplanted to a new host within two or three hours after death. On occasion, transplantation teams have "prolonged life with a respirator" or interfered with the course of a dying accident victim in other ways. The transplantation physician should divorce himself from care of the dying patient and take the cadaver kidney only after the attending physician has pronounced the patient dead, and a bereaved family has had the opportunity to assure themselves of the dignity of death.

Criteria for cadaver donors:

1. Age, less than 50 years.
2. Previous good health.
3. A measure of good renal function, usually normal blood urea nitrogen and estimation of creatinine clearance.
4. Absence of sepsis.

Criteria for living donors:

1. Age, less than 50 years.
2. Normal blood urea nitrogen and creatinine clearance.
3. Three negative urine cultures.
4. Aortographic demonstration of a single renal artery to the proposed donor kidney.
5. Normal pyelograms.
6. Freedom from psychiatric abnormalities.
7. Freedom of responsibility to dependents.
8. Major blood group compatibility.

Perhaps these criteria may be revised in the future, but this point is not in sight yet.

A Viewpoint on Renal Transplantation

Transplantation of a kidney from one person to another poses weighty moral, ethical, and legal questions. Renal allotransplantation is an experimental procedure, human experimentation, and the outcome to both donor and recipient is unknown. Further, each day in the management of these patients involves new concepts and problems in renal physiology, immunology, hematology, urology, radiotherapy, psychiatry, pathology, infectious diseases and pharmacology. Clearly, renal allotransplantation should be approached only where there is close cooperation of experienced investigators and clinicians in all of these fields, and then, only in terms of an experiment with a carefully designed protocol. Further, the issues of the rights and welfare of patients, potential donors, family, the medical profession and society at large must be squarely met. A transplantation group would do well to solicit advice and discussion from the legal, clerical, and medical communities.

Yet, individual physicians or small groups familiar with only a few aspects of the problem now and then attempt renal allotransplants, usually with fatal result. These physicians must be (1) stimulated by the dramatics of the lay press or the unbridled enthusiasm of a few investigators in the field, (2) ignorant of the facts or (3) so blinded by the care of the patient at hand as to ignore the welfare of a family, an unknowing donor or even the patient himself. That "the patient is going to die unless something is done" is no justification to conduct an experiment which may destroy the economic security of his family, prejudice the health of another person, and convert the relatively peaceful death of terminal uremia to an agony of multiple surgical procedures, septicemia—and the vicious features of antimetabolite poisoning—all, at best for the empty accolade, "at autopsy there were no signs of rejection of the graft."

Any physician who would entertain renal allotransplantation as a therapeutic measure should first ponder the denunciation by Elkinton[4] and, particularly, the carefully measured comment by Robin[5] for philosophical insight.

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Cardiac Rhythm (cont'd.)

The frequency of transient rhythm disorders during induction of general anesthesia is high and justifies routine cardiac monitoring to enable early detection, identification and close observation since they are often of sufficient severity as to predispose to cardiac asystole or ventricular fibrillation.

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JOHN CROWE, M.D., ***Secretary***

Missouri Academy of General Practice

Sixty members of the junior class of the University of Missouri School of Medicine attended a luncheon held in their behalf on Thursday, May 6. They were given information concerning various phases and types of medical practice throughout Missouri. The luncheon and accompanying program were sponsored by the Public and Professional Relations Committee of the MAGP is cooperation with the Rural Health Committee of the MSMA. The formal program centered around general practice under three situations, namely; solo, partnership and small group practice outside of the larger metropolitan areas. B. J. Bass, M.D., Salem, spoke on solo practice; Charles Worley, M.D., Sweet Springs, discussed partnership practice; and A. E. Spelman, M.D., Smithville, described his particular setup of a small group practice.

Sixty members of the junior class at the M.U. School of Medicine listen intently as practicing physicians discuss mechanics, advantages and disadvantages of solo, partnership and small group medical practice.

Following these formal presentations Doyle McCraw, M.D., Bolivar, President of MAGP, spoke on the purposes and programs of the Academy. The formal program concluded with a discussion by Paul Whitener, M.D., St. Louis, President of MSMA, on county medical societies, the State Medical Association and the AMA. Questions from the medical students were answered by the speakers and by Drs. H. M. Hardwicke and P. C. Hall.

Representatives of the medical school faculty attending the luncheon were Dean Vernon Wilson, Associate Dean William Mayer and Dr. Sherwood Baker, who is in charge of the general practice preceptorship program at the University.

Student planner and honored guests at the M.U. School of Medicine medical practice conference. (l. to r.) Mr. Neal Gray, President of the Junior Class; Drs. Doyle McCraw, President of MAGP; Paul Whitener, President of MSMA; and Vernon Wilson, Dean of the School of Medicine.

The President of the junior medical class, Mr. Neal Gray of Glendale, worked closely with those responsible for the event, and his efforts resulted in a fine turn-out of the junior class members.

Kenneth Knabb, M.D., Springfield, Chairman of the Public and Professional Relations Committee of the MAGP, served as master of ceremonies introducing the speakers and handling the general discussion period.

MSMA President Dr. Paul Whitener outlining medical organization at the county, state and national levels for junior students at the M.U. School of Medicine. Other speakers discussed various types of medical practice.

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New Members

Leovigildo Cokingtin, M.D., 1710 Independence, Kansas City, has become a member of Jackson County Medical Society. Dr. Cokingtin is a native of Manila, Philippine Islands, received his preliminary education at San Beda College, and his M.D. degree at the University of Santo Thomas in 1955. He specializes in pediatrics.

Jack M. Colwill, M.D., 807 Stadium Rd., Columbia, has become a member of Boone County Medical Society. Dr. Colwill is a native of Cleveland, Ohio, received his preliminary education at Oberlin College, and his M.D. degree at the University of Rochester in 1957. He specializes in internal medicine.

Martin L. Crow, M.D., 4177 Broadway, Kansas City, has become a member of Jackson County Medical Society. Dr. Crow is a native of Henrietta, Arkansas, received his preliminary education at Henderson College, and his M.D. degree at the University of Arkansas in 1957. He specializes in plastic surgery.

William L. Donegan, M.D., Ellis Fischel Cancer Hosp., Columbia, has become a member of Boone County Medical Society. Dr. Donegan is a native of Jacksonville, Florida, received his preliminary education at Yale University, and his M.D. degree at Yale University in 1959. He specializes in general surgery.

Carl H. Ide, M.D., Kansas City General Hosp., Kansas City, has become a member of Jackson County Medical Society. Dr. Ide is a native of New York, N. Y., received his preliminary education at the University of New York, and his M.D. degree at the University of Hamburg, Germany in 1959. He specializes in ophthalmology.

Jose Jimenez, M.D., 5400 Arsenal St., St. Louis, has become a member of St. Louis Medical Society. Dr. Jimenez is a native of Peru, received his preliminary education at San Marcos University, Lima, and his M.D. degree at San Marcos University in 1958. He specializes in psychiatry.

Robert M. Joyer, M.D., 4050 Lindell Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Joyer is a native of Minot, North Dakota, received his preliminary education at St. John's University, and his M.D. degree at the University of Minnesota in 1949.

July P. Miller, Jr., M.D., 4524 Forest Park Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Miller is a native of St. Louis, received his preliminary education at Washington University, and his M.D. degree at Washington University in 1953. He specializes in psychiatry.

Joseph G. Nouhan, Jr., M.D., 100 Ladue Meadows Lane, St. Louis, has become a member of St. Louis County Medical Society. Dr. Nouhan is a native of Paterson, New Jersey, received his preliminary education at Wayne State University, and his M.D. degree at St. Louis University in 1961. He specializes in obstetrics and gynecology.

Leland U. Pfefer, M.D., 1504 E. Broadway, Columbia, has become a member of Boone County Medical Society. Dr. Pfefer is a native of Denver, Colorado, received his preliminary education at the University of Missouri, and his M.D. degree at the University of Missouri in 1961. He specializes in internal medicine.

Mary L. Schaef, M.D., 10695 Bellefontaine Rd., St. Louis, has become a member of St. Louis County Medical Society. Dr. Schaef is a native of Armstrong Mills, Ohio, received her preliminary education at the University of Cincinnati, and her M.D. degree at the University of Cincinnati in 1946. She specializes in psychiatry.

E. David Scott, M.D., Jefferson City, has become a member of Cole County Medical Society. Dr. Scott is a native of Jefferson City, received his preliminary education at Lincoln University, and his M.D. degree at Missouri University in 1964. He specializes in general practice.

Herbert N. Shapiro, M.D., 1515 Lafayette, St. Louis, has become a member of St. Louis Medical Society. Dr. Shapiro is a native of St. Louis, received his preliminary education at St. Louis University, and his M.D. degree at the University of Missouri in 1960. He specializes in surgery.

Donald M. Spencer, M.D., University of Kansas Medical Center, Kansas City, Kansas, has become a member of Jackson County Medical Society. Dr. Spencer is a native of Kansas City, Missouri, received his preliminary education at Kansas State University, and his M.D. degree at the University of Kansas in 1960. He specializes in orthopedic surgery.

Charles A. Winterling, M.D., 1515 Lafayette, St. Louis, has become a member of St. Louis Medical Society. Dr. Winterling is a native of Pittsburgh, Pennsylvania, received his preliminary education at Oberlin College, and his M.D. degree at the University of Rochester in 1958. He specializes in internal medicine.

In Memoriam

Tooker, Charles W., M.D., St. Louis, a graduate of Washington University, 1904; member of St. Louis Medical Society; aged 84; died April 28, 1965.

Casebolt, Milton B., M.D., Kansas City, a graduate of St. Louis University, 1925; member of Jackson County Medical Society; aged 68; died April 29, 1965.

Cibis, Paul A., M.D., St. Louis, a graduate of University Medical School, Breslau, Germany, 1936; member of St. Louis Medical Society; aged 54; died April 30, 1965.

Alden, Arthur M., M.D., St. Louis, a graduate of St. Louis University, 1915; member of St. Louis Medical Society; aged 80; died May 1, 1965.

Pittam, Radford F., M.D., Hutchinson, Kansas, a graduate of the University of Pennsylvania, 1920; member of Jackson Medical Society; aged 69; died May 3, 1965.

Cruvant, Bernard A., M.D., St. Louis, a graduate of Washington University, 1937; member of St. Louis County Medical Society; aged 54; died May 7, 1965.

Stephan, August P., M.D., Jefferson City, a graduate of the University of Louisville, 1941; member of Cole County Medical Society; aged 51; died May 15, 1965.

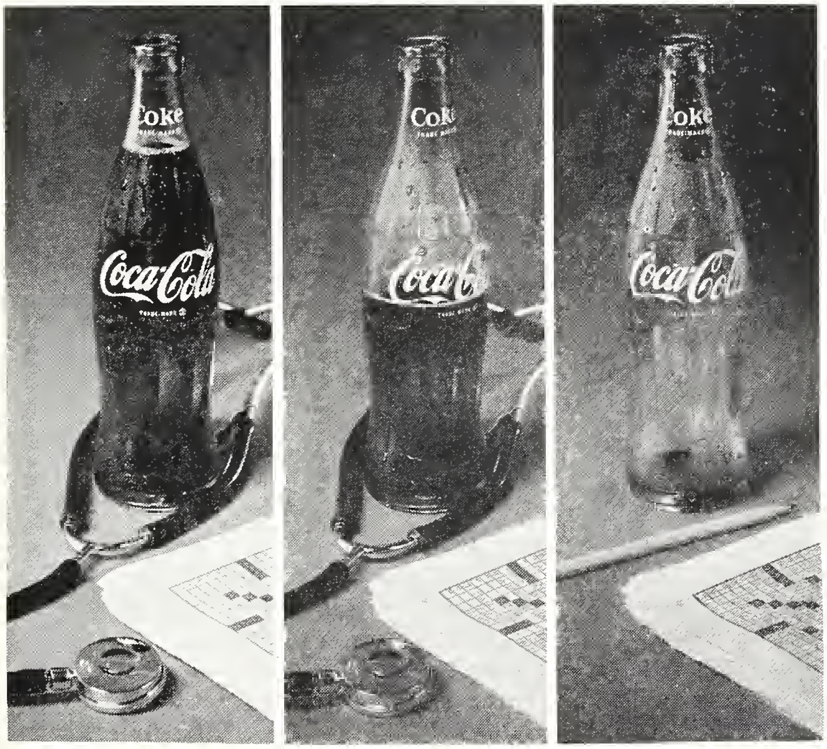
Scott, Clive D., M.D., Louisiana, a graduate of Washington University, 1903; member of Pike County Medical Society; aged 86; died May 16, 1965.

Fisher, George E., M.D., Lebanon, a graduate of Chicago Medical School, 1939; member of Mid Missouri Medical Society; aged 51; died May 24, 1965.

McElvain, Robert C., M.D., Boca Ratan, Florida, a graduate of the University of Illinois, 1910; member of St. Louis Medical Society; aged 78; died May 30, 1965.

Albrecht, Franklin H., M.D., St. Louis, a graduate of St. Louis Medical College, 1902; member of St. Louis Medical Society; aged 82; died June 4, 1965.

Brisner, Louis J., M.D., St. Louis, a graduate of St. Louis University, 1915; member of St. Louis Medical Society; aged 73; died June 15, 1965.



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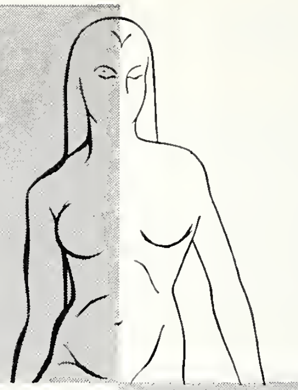

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SIDE EFFECTS: Blurring of vision, dry mouth, difficult urination or flushing and dryness of the skin may occur at higher dosage levels, rarely at the usual dose.

* This one at Oak Creek, Castle Rock, Arizona

References: 1. Hock, C. W.: Clin. Med. 8:1932, 1961. 2. Marks, L.: Am. J. Gastroenterol. 27:180, 1957. 3. Palmer, W. L., and Kirsner, J. B.: Therapeutics in Internal Medicine, 2nd ed., F. A. Kyser, Ed., Hoeber, New York, 1953, p. 368. 4. Ryan, J. P., Jenkins, H. J. and Robinson, S. M.: J. Pharmaceut. Sciences 53(9):1084, 1964. 5. Vollmer, H.: Arch. Neurol. & Psychiat. 43:1057, 1940. Abst. J.A.M.A. 115:333, 1940. 6. Wharton, G. K., Balfour, D. C., Jr., and Osman, K. I.: Postgrad Med. 21:406, 1957.

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Paul R. Whitener, M.D.

President's Message

It was with real pleasure and pride that we watched Mrs. Richard A. Sutter of St. Louis being installed as the new President of the Woman's Auxiliary to the American Medical Association. Betty Sutter has accumulated an impressive personal history as wife, mother and community leader; and, as head of the Auxiliary, she should serve as a shining example of what an intelligent American woman can do if she puts her God-given talents to their best uses.

As I watched the installation ceremony, I could not help wondering whether organized medicine has effectively utilized the large reservoir of vitality and enthusiasm which is represented by physicians' wives. It is true that Auxiliaries exist at the local, state and national levels. But have we, in organized medicine, really accepted these ladies as co-workers in our public relations, legislative contact and other non-professional-non-scientific endeavors?

The modern doctor is often too busy to take an active role in the numerous voluntary health organizations, to get acquainted with the local newspaper editor or radio-TV manager, or to establish a personal contact with his own legislators and political leaders. Such a doctor may, however, have a wife who would be more than glad to at least try some of these community activities. Such a woman can serve as both a voice and an ear for medicine in the great non-professional segment of society. It appears to me that many of medicine's problems today can be traced to a lack of such a link. Too often, medicine's ideas and philosophies are not getting to the general public; and too often, public attitudes and feelings are not reaching organized medicine.

I would call your attention to a couple of sentences from the Annual Report of Mrs. Ralph Bohnsack, President of the Missouri Woman's Auxiliary. "Please call on us for support where you feel we can assist you. God made us your helpmate. Let us continue to serve you."

Paul R. Whitener M.D.

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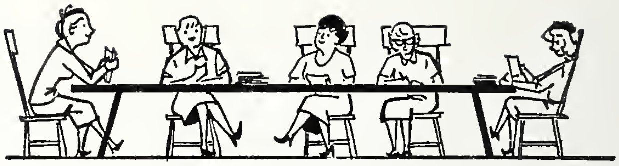
Woman's Auxiliary



Greetings! I'm beginning this article the week before our National Convention in order to meet our publication deadline. However, I'm going to leave space to add a few lines about the Convention in New York where Betty Sutter will become our AMA Auxiliary President!

Since my last article, I have been hard at work, getting out my President's letter, the new roster and stationery. I made it before June 1, thanks to the tremendous help of Georgianna Howell, our Corresponding Secretary.

Mrs. R. W. Bohnsack

I have also been writing reports and planning the reception for Betty Sutter following her installation. Wilda Stacey and I chose beautiful matching silver trays which will be presented to Betty in a token of esteem by the Auxiliary and the Missouri State Medical Association.

I went to Fulton on May 4 to a lovely luncheon at the Country Club and installed the new officers of the Callaway County Auxiliary. Helen Tuttle is the new President. I visited briefly in the homes of Fern Ritterbusch and Betty Durst.

On May 25 I left early in the morning and drove to Springfield for a luncheon meeting of the Greene County Auxiliary and interesting tour of the fall-out shelters. I had enjoyable visits in the homes of Lucy Siceluff and Pat Lockhart, the past and new Presidents of their Auxiliary.

On Wednesday morning, May 26, I went to Poplar Bluff and was entertained at a luncheon of the Butler-Ripley-Wayne Auxiliary in the beautiful home of Marjorie Tapp. We made plans for our Fall Conference which will be held there at the Holiday Inn, October 20-21. We will have a HOOTENANNY FOR HEALTH, so tune up your fiddles, "geetars," ukuleles and banjos, girls, and begin vocalizing! I'm hoping it will be both fun and informative! I was quite impressed with southeast Missouri on my first trip there, and it should be perfectly beautiful in October. Plan to bring your husbands along for a good rest, golf, swimming, fishing, etc.! Our reservations must be in by the last of August, so make your plans now. President Merline McLain and the members of Butler-Ripley-Wayne, as well as the other members from the Tenth District, will do a fine job planning our Conference, I know.

On June 7 I went to St. Louis and attended the installation luncheon of the St. Louis Auxiliary. Helen Sanders is the new President. Dorothy Lottes just finished a fine year.

I was happy to see that Missouri has received a check for nearly $45,000 from AMA-ERF through the efforts of our Auxiliary. Each dollar we give is actually worth $12.50. Missouri Auxiliaries contributed $4,970.71 for the year ending May 31, 1965. Last year it was $4,138.50, so we had a nice increase. Incidentally, there is a new list of fund-raising ideas available. You can obtain a copy from your AMA-ERF Chairman, Mrs. Doyle Whitman, 6836 Cherokee Lane, Shawnee Mission, Kansas 66208.

P.S. We returned last night, June 29, from the New York Convention. It was a wonderful meeting and, of course, the highlight for us was Betty Sutter's installation as National President. Missouri had quite an aggregation on hand to congratulate her. Dr. Whitener and I presented her with the beautiful silver trays; Geraldine Walton, a lovely charm from the St. Louis County group; Wilda Stacey, a white orchid corsage; and Dr. James Sisk, two dozen red roses from the St. Louis County Medical Society. There were other individual gifts, too. This was followed by a gala reception for approximately 350 people. The Sutter children proudly joined their parents, the Whiteners, and Bohnsacks in the receiving line. Betty's inaugural address and the way she conducted the Post-Convention meeting Thursday morning indicated that she will live up to our expectations and will make Missouri proud of her as our National Auxiliary President for 1965-66!

County Society News

FIRST DISTRICT

COUNSELOR
JOSEPH FISHER, M.D., ST. JOSEPH

GRAND RIVER MEDICAL SOCIETY

Thirty-eight members and guests of the Grand River Medical Society and Auxiliary met for their regular monthly dinner meeting in Chillicothe on May 15.

We were especially pleased to have as guests: Dr. and Mrs. Joseph Fisher of St. Joseph; and Dr. and Mrs. Norman Asel of Columbia. Dr. Asel gave a very interesting scientific presentation on "Superficial Dermatophytes." Mr. Bill Van Arsdale of Arrow Rock spoke to the Auxiliary about the inception and progress of the Lyceum Summer Theatre at Arrow Rock. The drug firm representatives did their usual fine job.

The June meeting will be the final session until September.

ALBERT D. CROSS, M.D., *Secretary*

BUCHANAN COUNTY MEDICAL SOCIETY

Forty physicians attended the June 2 meeting of the Buchanan County Medical Society which followed a dinner at the Hotel Robidoux in St. Joseph. Dr. Herbert C. Senne, President, presided. Dr. Robert W. Kieber, Chairman of the special committee on mass oral polio vaccine, reported on the program which was undertaken on March 28 and May 23. The project was an outstanding success. The Society distributed more than 67,000 oral feedings of the vaccine in St. Joseph and nearby communities. Although on a voluntary donation basis, a substantial profit was indicated from the project, and this money will be used on a philanthropic endeavor of the Society.

The scientific program was a panel discussion on "Gout." Participants were: Drs. R. Phillip Acuff, radiologist; Joe S. Gunter, urologist; Jacob Kulowski, orthopedic surgeon; and Donald J. Stallard, internist. Doctor Stallard served as moderator. Each participant discussed the disease from the aspect of his specialty. Numerous slides were shown illustrating the history, diagnosis and various types of therapy for the ailment.

BERWYN H. MOEN, M.D., *Secretary*

S **effects and precautions:** The transitory
c vsiness which may occur with hydroxyzine
H usually disappears spontaneously in a few
d s with continued therapy, or is correctable
b osage reduction. Dryness of the mouth may
b een with higher doses. Involuntary motor
a vity has been reported in hospitalized
p ents on higher than recommended doses.
H roxyzine HCl may potentiate CNS depres-
s s, narcotics such as meperidine, barbitu-
r s, and anticoagulants. In conjunctive use,
d ge for these drugs should be decreased.
B use drowsiness may occur, patients should
b autioned against driving a car or operat-
ir dangerous machinery. **Parenteral Solution**
P **autions and contraindications:** This dosage
f is intended only for I.M. or I.V. adminis-
tr on and should not, under any circum-
st ces, be injected subcutaneously or intra-
a ially. When the usual precautions for I.M.
in tion have been followed, reports of soft
ti e reactions have been rare. I.V. adminis-
tr on should be slow, no faster than 25 mg.
p minute, and should not exceed 100 mg. in
a single dose. Particular care should be used
to sure injection only into intact veins; a few
in nces of digital gangrene occurring distal
to e injection site have been attributed to
in vertent intraarterial injection or periarte-
ri extravasation, both of which should be
a ded. **More detailed professional informa-**
ti **available on request.**

SECOND DISTRICT

COUNCILOR
LYSLE M. BACH, M.D., HANNIBAL

Chariton-Macon-Monroe-Randolph County Medical Society

The Chariton-Macon-Monroe-Randolph County Medical Society met at the Woodland Hospital in Moberly on May 13, for a dinner meeting. E. Robert Schultz, M.D. of St. Louis, was the guest speaker. He specializes in the field of neurology and psychiatry and used as his subject, "The Electroencephalogram in Neurologic Disease." In his interesting discussion, Doctor Schultz emphasized that the use of this instrument as a diagnostic tool is limited and does not replace a careful physical examination and history taking. Dr. L. E. Huber of Moberly, President of the Society, presided.

Members who were present: Drs. D. E. Eggleston, H. M. Miller, and J. E. Campbell of Macon County; F. L. Harms and G. C. Rice of Chariton County; P. V. Dreyer of Huntsville; F. A. Barnett of Monroe County; and Josephine Baker, A. P. Rowlette, J. W. Fleming, T. S. Fleming, R. H. Young, W. D. Chute, C. C. Cohrs, R. Hasson and C. C. Smith of Moberly. Dr. L. LaChance of Centralia was a guest.

Robert Hasson, M.D., *Secretary*

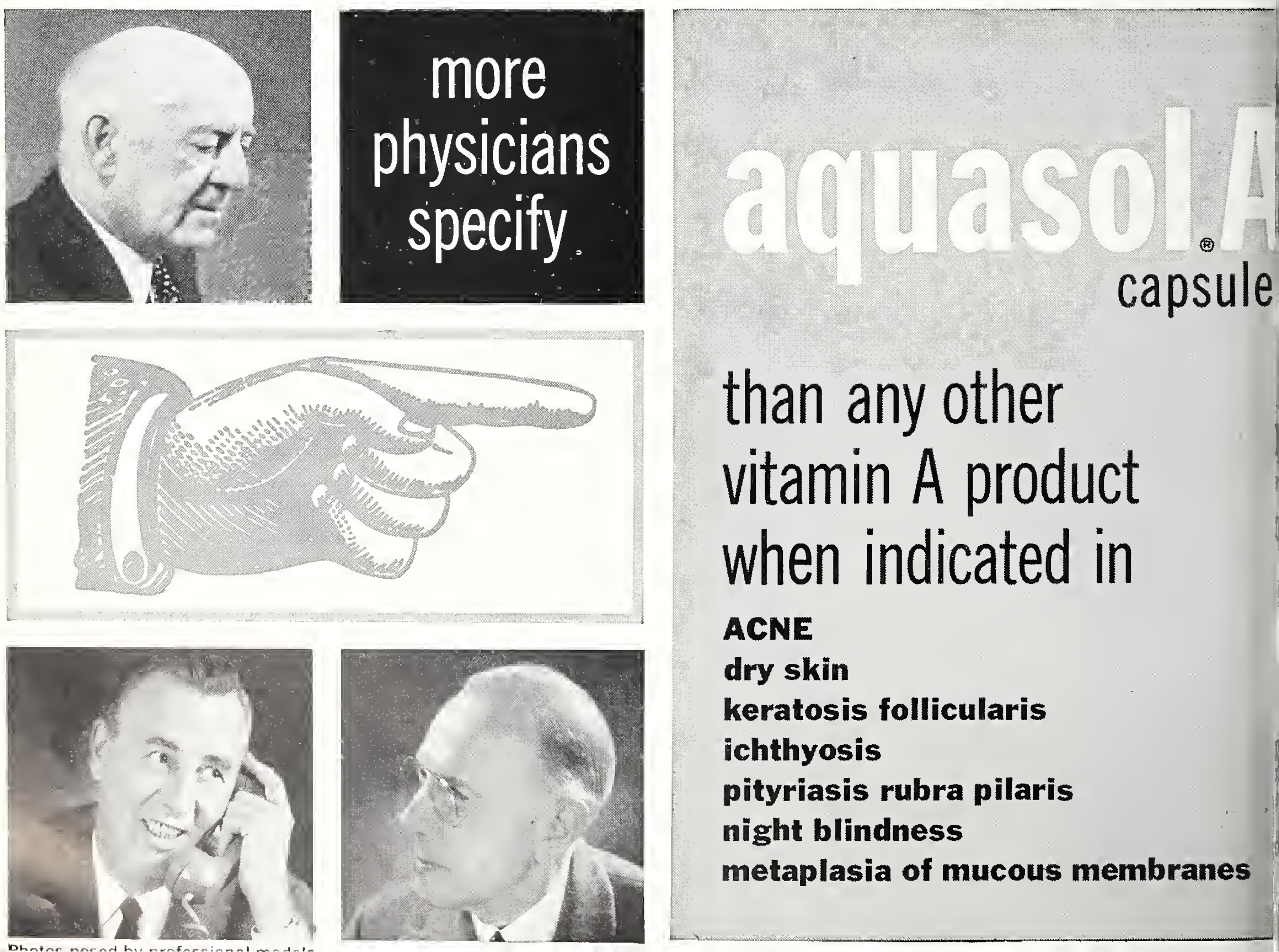
SIXTH COUNCILOR DISTRICT

COUNCILOR
ROLLA B. WRAY, M.D., NEVADA

Area Medical Meeting

On Wednesday evening, May 19, the 805th Medical Group, Whiteman Air Force Base, served as host to a medical meeting involving the county medical societies in the area and the doctors' wives. Approximately 125 persons attended this event which has become an annual affair.

The evening festivities began with an enjoyable social hour, followed by an excellent dinner and then the program. The doctors present were privileged to hear an excellent discussion on the subject, "Mammography," presented by Lt. Col. Robert Kurth, USAF, MC, Chief, Radiological Services, USAF Hospital, Scott AFB, Illinois, and Major Brian S. Harrold, USAF, MC, Chief, Pathology Services, USAF Hospital, Scott AFB, Illinois. During the scientific program the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doctors' wives were entertained with a special movie secured for their interest.

Rolla B. Wray, M.D., *Councilor*

West Central Missouri Medical Society

The May meeting of the West Central Missouri Medical Society was held at the Country Club in Nevada on May 13, 1965. This was a joint meeting of area doctors and dentists. Twenty-five members of the two professions attended.

The scientific portion of the program followed the dinner. Dr. Harry E. Webb, a plastic and maxillo-facial surgeon from Kansas City, made a very interesting and instructive presentation regarding the diagnosis and treatment of injuries in the maxillo-facial area. His presentation was well received by those present.

Following the scientific portion of the program, a brief meeting of the Medical Society was held. Minutes of the March meeting were read and approved. There had been no meeting in April due to the conflict with the MSMA meeting. Correspondence received by the Secretary was read and discussed. It was announced that there would be no meetings of the Society during the months of June, July and August and that the next meeting will be at Harrisonville in September.

Roy W. Pearse, Jr., M.D., *Secretary*

Military and civilian medicine intermingle at annual Whiteman Air Force Base area medical meeting. (l. to r.) Major Brian S. Harrold, USAF, MC; Lt. Col. Robert Kurth, USAF, MC; Rolla B. Wray, M.D., 6th District Councilor; and Lt. Col. William G. Sanford, Commander, 805th Medical Group, Whiteman AFB.

NINTH DISTRICT

COUNCILOR
E. A. STRICKER, M.D., ST. JAMES

Mid-Missouri County Medical Society

A dinner meeting of the Mid-Missouri County Medical Society and the doctors' wives was held

(Continued on page 706)

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EDITORIALS

TIME FOR A "NEW LOOK"

In the wake of the recent AMA Convention in New York, it seems appropriate to call attention to a resolution which was adopted by the 107th Annual Session of the MSMA House of Delegates, meeting nearly two months earlier in St. Louis.

RESOLUTION

WHEREAS, Over the years the American Medical Association has frequently been blamed and criticized for a national image of reactionary opposition to federally sponsored public health plans, and

WHEREAS, The AMA is frequently accused of failure to represent the opinion of the majority of physicians,

Therefore Be It Resolved, That we of the MSMA publicly endorse the basic precepts enunciated by the AMA in its opposition to these plans, currently and specifically "Medicare," and reaffirm our support of the American Medical Association.

Be It Further Resolved, That regardless of the outcome of pending health care legislation, the AMA be encouraged to exhibit a progressive imaginative leadership in the study and furthering of attractive alternatives to a socialized system of medicine which will otherwise follow in the evolutionary sequence of events.

And Be It Further Resolved, That notification of this action be forwarded to the AMA and all State Medical Societies.

This resolution was introduced by Edward D. Kinsella, M.D., of St. Louis. In support of his proposal, Doctor Kinsella argued that the resolution, if approved, would: (1) exhibit unity of opinion and support of AMA opposition to measures which sanction or promote socialized medicine; (2) express a large body of medical opinion which favors a leadership interested not only in opposition, but one leading the way to constructive alternative proposals which will block the evolution of socialized plans; (3) see the AMA become identified with progress, not counter reaction; (4) imply the belief that an attitude of persistent opposition eventuates in a greater loss of desired ends than does active participation in planning to mold the future; and (5) by taking positive action, prevent a massive spirit of defeatism which will split physicians into two groups and weaken MD opposition to socialized medicine.

Doctor Kinsella stated that the AMA came out with its "Eldercare" program only because it was forced into a last ditch defensive position and not as a result of forward looking leadership. "It is this approach to planning that should be changed. 'Eldercare,' however, does represent constructive national health care planning by the AMA, and for this, the AMA is to be praised. There must be continued planning at the national level," said the St. Louis physician.

"It is not possible to maintain the *status quo* in our changing society, and physicians must become identified with energetic leadership. Physicians by nature are a *laissez faire* conservative group which has succeeded around the world in losing its stature in the morass of socialized medicine. We are as vehemently opposed to this as any among you with strong feelings. But we do believe that the way to avoid socialized medicine is to endorse a leadership with imagination for alternative changes in keeping with the demands of our restless society.

"Old age legislation is only the first step. The next has already been introduced, namely, to cover the young. And who is to say that the needy between the young and the old should not also be covered by a national health plan? Are physicians going to sit back and wait to be told what to do or again hope for a last minute alternative, or will they plan a better plan to block the call for an extension of socialized medicine? . . .

". . . The reactionary attitude that has typified our body and the AMA is engulfed in the natural consequences of its own rigidity. When a reactionary opposition is beaten, it is through and its voice becomes weak. But, if we help plan for the future and can inculcate a new enthusiasm for imaginative leadership in the AMA, then the prospects for our future and a continuation of the best medical care for our patients will be ever so much brighter. It is not too late except for defeatists and for those who would hold the line."

Doctor Kinsella concluded, "This is the philosophy of progress that should be carried into . . . the AMA."

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CRAFT UNION OR PROFESSIONAL ORGANIZATION?

Donovan F. Ward, M.D., says, "You won't do it."
The Kansas City Star says, "You shouldn't do it."
Your super ego says, "You can't do it."

Is it possible for doctors to strike? I believe not. A strike implies a union or an association of artifieers combined to protect people whose economic security lies in a show of strength if external circumstances contrive to threaten their stability.

The physician is not a craftsman; the physician is not a tradesman; the physician is not a laborer. The physician is a professional man; one who uses his knowledge, training and skill to modify his environment for the benefit of others. He is not an integer or a cipher in an economic station, subject to replacement by transistors and telescoping artificial arms.

A strike is an economic weapon utilized by an association of individuals who are unable to protect themselves singly against economic or political adversity. Strikes impede progress, damage the common good and rebound to the discredit of other helpless individuals. These unforunate circumstances are put into play to insure the economic benefit of a group hoping to be privileged, i.e., the strikers.

Physicians should band together to achieve cooperatively common aims and goals that cannot be achieved individually. These common aims and goals should be achieved in a progressive, persistent fashion, rather than being achieved by a negative gesture which refuses professional benefits and services because of fancied slurs and insults, whether economic or political.

To strike? No! To work through the medical associations for the continued good health of our citizens? Yes!

GEORGE J. LYTTON, M.D., Editor
Greater Kansas City Medical Bulletin
June 26, 1965

MMPAC: WHAT, WHY AND HOW?

The purpose of the Missouri Medical Political Action Committee (MMPAC) has never been clear to many of our physicians. Most of its former supporters felt that it was organized to fight "Medicare." This is not true. As an outcome or a coincidence of its organization and as a rallying point, the fight against "Medicare" has received the most emphasis.

MMPAC is a non-partisan movement which started much later than it should have, but is not too late to be effectual. The organizers of COPE (the AFL-CIO's Committee on Political Education) started 30 years ago!

It is an established fact that elected representatives respond most directly to the people who obtain votes for them or who vote for them. COPE was established to gather votes at the precinct level and to be active in political affairs at the school district, city, county, state and national levels. As a consequence of this, the office holders in many of these areas owe an allegiance to this movement; and stemming directly from this, a majority of our national legislative body and the executive branch now reflect the feelings of this group of voters.

Because medicine's position has been basically right all of these years, we have been able to stave off most unwanted legislation despite its minimal involvement in political activity. *Political reality finally has eaten away this prior advantage.* To re-emphasize, our governing bodies reflect the opinion of the people who elect them. Therefore, to obtain our fair representation we are going to have to play a greater role in electing office holders. This does not mean just giving $50 or $100 at election time. This means becoming politically active, so that *you* obtain *votes* for your candidate. This means joining and taking an active part in your political party, be it Democrat or Republican.

One MMPAC purpose is to stimulate action in this direction. This, we liken to treating the disease rather than *the symptoms.* If we elect the right kind of office holders, we won't have to make expensive last ditch fights on "bad" legislation. But to elect office holders, we have to work at the precinct, ward, county, state and national levels.

A favorite pastime of physicians and people in general is to discuss at great length how wrong, and "even immoral," this or that program of government is. The political fact, however, is that programs of government are authorized by individuals who are elected to office by votes, not by coffee table palaver. Votes are obtained from people in your own neighborhood!

MMPAC also engages in candidate support activity. A Candidate Support Committee under the direction of the Board of Directors selects likely candidates who are sympathetic to the views of medicine regardless of their political affiliation. Your money is used to help these individuals in their political campaigns. We don't always pick winners, but we have always finished in the first division in our percentage of winners.

MMPAC is establishing a framework of members in each community of Missouri to assist you in political activity. You can assist by assuring MMPAC of your moral, physical and financial support.

F. THOMAS MOSELEY, M.D.
Chairman, MMPAC

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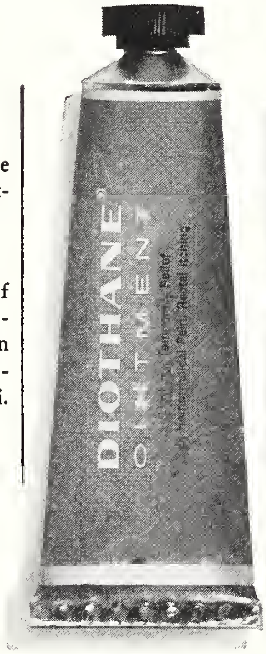

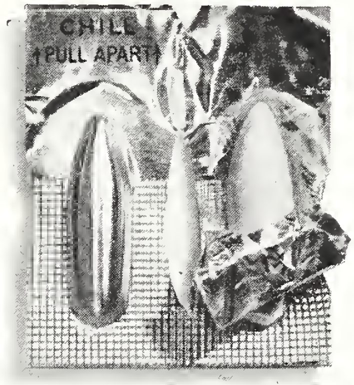

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County Society News (cont'd.)

in Rolla on May 22. The evening festivities began with a social hour, followed by dinner and then the program.

The speaker for the evening was Carl J. Marienfeld, M.D., Professor, Department of Community Health and Medical Practice and Director of Interdivisional Health Related Research, Missouri University School of Medicine, who spoke on, "Present Concepts in Rheumatic Fever."

This was a most interesting and informative discussion.

M. K. Underwood, M.D., *Secretary*

TENTH DISTRICT

COUNCILOR
W. D. ENGLISH, M.D., CARDWELL

Mineral Area Medical Society

The program of the Mineral Area Medical Society meeting, the evening of May 27, began with a scientific program presented by Willard Bartlett, Jr., M.D., Department of Surgery, St. Louis University Medical School, who discussed, "Parenteral Nutrition of the Post-Operative Patient."

Following his scientific discussion and case presentation, the meeting was addressed by MSMA President, Dr. Paul Whitener, who discussed various state and national factors affecting the practice of medicine.

Dr. W. D. English, District Councilor, addressed the meeting and requested that we re-evaluate our thinking about a move of the State Office to Jefferson City and notify him of our opinion. The Society had previously gone on record as being opposed to such a move.

The regular business meeting was presided over by the Vice-President, Dr. William A. Brennan. It was voted to continue the policy of having a summer picnic in connection with the 4th of July (probably this year on July 11) with details to be arranged by the Secretary and the Woman's Auxiliary. Previous arrangements for handling picnic expenses were to be continued.

Notification of free vaccines available from the State Health Department was given to the doctors.

A motion was made by Dr. Watkins and seconded by Dr. Karraker that the Mineral Area Medical Society go on record as thanking our congressman, Paul C. Jones, for the widsom and courage shown in his stand on the federal "medicare" program. The secretary was instructed to communicate this feeling to the Congressman. The motion passed unanimously.

General discussion was held concerning the program of physical examinations for Neighborhood Youth Corps enrollees. It was felt that the examination agreement showed inadequate appreciation of the amount of time required to perform the various tests, examinations, laboratory procedures and paper work called for, and that the fee was insufficient for performance of an adequate examination. The secretary was instructed to contact both the Governor and the Administrative Assistant for Urban Affairs with our feeling in this matter.

Society members who attended the meeting were: Drs. Huckstep, Burcham, Karraker, Chastain, Watkins, Mullen, Ford, Brennan, Hoctor, Osborne, Hunt, Tejero, and Garcia.

C. W. Chastain, M.D., *Secretary*

The Kansas City Southwest Clinical Society announces that its 43rd Annual Fall Conference will be held in Kansas City, October 4-6, 1965. More than 20 guest speakers have accepted invitations to present scientific papers. The program is acceptable for 20½ accredited hours by the American Academy of General Practice.

The 16th national conference on Disaster Medical Care will be held in Chicago, October 30-31, 1965. Four symposiums will be held during the two-day meeting to develop the conference theme of unified health resources planning for disaster. The conference is sponsored by the AMA Council on National Security.

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FOR RENT—Desirable well located office in Fulton, Missouri, a city of 11,000; Westminster and William Woods Colleges; Factories, Parks; swimming pools. Accredited eighty bed hospital, open staff. Retiring. Contact R. N. Crews, Fulton, Missouri.

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WANTED—ECG machine. Small, late model electrocardiograph. Contact Box 317, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Mo. 63103.

FOR SALE—Armstrong Baby Incubator—in good condition, $150.00. One St. Luke Type obstetrical bed with conductive mattress, $100.00. Have discontinued obstetrics and will deliver for above price. Contact Kenyon Latham, M.D., Latham Hospital, California, Mo.

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WANTED AT ONCE—General Practitioner under 40, tired of solo practice, for association with surgeon, internist and general practitioner in new office building with x-ray, laboratory, minor surgery facilities and all equipment furnished; one-half block from 120 bed acute, general, approved, open-staff hospital in Central Iowa agricultural-industrial town of 25,000, mostly Protestant; county seat; with new nursing home, excellent schools, Junior College, adult education, art center, concert, theater, housing available and off-time coverage. Contact Box 318, c/o Missouri State Medical Association, 623 Missouri Theatre Building, St. Louis, Missouri 63103.

WANTED—Partner who desires to practice general medicine. The hours are too long and the pay too little; but the satisfactions are many. Contact M. C. Walton, M.D., Mountain View, Missouri.

INTERNIST—For five-man department in busy and steadily growing north-central Kansas 13-member multi-specialty group. Partnership after salary for two years. Board eligible or Certified. Write Gerald R. Arnold, Business Manager, Gelvin-Haughey Clinic, Concordia, Kansas.

FOR SALE—Bucky table; film bin, cassette storage area and waste bin for X-ray dark room; Birtcher EKG; Proctoscope and new Anoscope; Set-up for D & C; Miscellaneous supplies and surgical instruments; Coleman Spectrophotometer, new. Contact William W. Bradley, M.D., 120 N. Rollins, Centralia, Missouri 65240.

WANTED—Staff Physicians (3)—General Practitioners 45 or under to assist attending staff and General Practice residents in 260 bed general hospital. Annual appointment preferred. $15,000-$17,500 depending on training and experience. Contact Medical Director, San Luis Obispo General Hospital, San Luis Obispo, California. Phone: 805-543-1500.

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From the Medical Schools

WASHINGTON UNIVERSITY

Dr. William H. Danforth has been appointed Vice Chancellor for Medical Affairs at Washington University. The appointment was effective July 1. Dr. Danforth will succeed Dr. Carl V. Moore, who will continue to serve as head of the University's Department of Medicine.

Dr. Danforth, 38, a graduate of Princeton University and Harvard Medical School, is associate professor of medicine, and has been a member of the staff of the Medical School since 1954. He specializes in cardiology and has published extensively on myocardial metabolism.

Dr. Moore, in addition to continuing as head of the Department of Medicine, will continue for the present to serve as President of Washington University Medical School and Associated Hospitals, the coordinating body which includes, in addition to the University's five hospitals, Barnard Hospital, Barnes Hospital, Jewish Hospital and St. Louis Children's Hospital.

Marshall Permutt, Birmingham, Ala., was awarded the Borden Undergraduate Research Prize at the Senior Awards Ceremony at the School of Medicine on June 6. Permutt received the prize, which carries a $500 award, for his studies on the immunochemistry of lysine vasopressin and other posterior pituitary hormones. Permutt will intern at Yale University in Grace-New Haven Hospital.

Eighty-three seniors were honored at the awards program at the Medical School. Speaker at the assembly was Dr. Carl A. Moyer, Bixby Professor of Surgery and head of the department.

The Dr. Richard Brookings Medical School prize went to Peter Schwartz of Chicago. Schwartz, who will continue his studies at Monash University, Clayton, Victoria, Australia, in September, was cited for his studies on diffusion of blood water in normal tissues and mammary carcinomas in mice. The Dr. Robert Carter Medical School prize was awarded to Phillip Hoffsten of Wheaton, Ill., for his research on mitochondria in rat liver. Hoffsten will intern at Vanderbilt University Hospital. The two prizes are awarded annually for meritorious research or other performance carried on by students in the School of Medicine. They are made possible through residual funds specified in the will of Mr. Robert S. Brookings.

Richard Myers, Dexter, Mo., was named recipient of the ΑΩΑ prize for maintaining the highest four-year academic average. The Missouri State Medical Association annual award to an honor graduate went to G. Leland Melson, Lincoln, Nebraska.

Dr. Alan McAffee ('42) has been named president-elect of the Washington University Medical Alumni Association. Dr. John Hobbs ('27) was elected vice president and Dr. Richard Bradley ('52) was re-elected secretary-treasurer.

Dr. Ray D. Williams ('37) is president of the Association for the coming year.

ST. LOUIS UNIVERSITY

Dr. Robert H. Felix, Dean of the St. Louis University School of Medicine, received the Golden Plate award during the fourth annual "Salute to Excellence" weekend of the American Academy of Achievement held in Dallas June 24-27. Dean Felix' citation stated that he was "A fifth-generation physician, leader, philosopher and administrator of the Nation's attack on mental illness." Presentation of the Award took place during the Banquet of the Golden Plate which climaxed a weekend festival tribute to national and international guests of honor.

Nine graduating physicians were recipients of honor awards at the annual Medical Senior Banquet sponsored by the University's Medical Alumni Association. Dr. Richard B. Whiting of St. Louis, who graduated *magna cum laude,* was the winner of the $100 Missouri State Medical Association Award for outstanding performance in medicine. Dr. Robert G. Trinity of Glendale, Calif., who also graduated *magna cum laude,* received the $100 Dr. G. O. Broun, Sr., award for outstanding performance in internal medicine.

The Institute for Molecular Virology, headed by Dr. Maurice Green, received two grants totaling $223,000 from the National Institutes of Health. A $157,000 contract from the Vaccine Development Program of NIH will support Dr. Green's studies of the chemical and physical properties of human adenoviruses, and the establishment of an electron microscope laboratory. A $66,000 award paid for the renovation and equipping of a protein laboratory and the purchase of laboratory equipment.

The Department of Microbiology has received a $105,000 award from the National Science Foundation for the support of research under the direction of Dr. Norman Melechen, professor of microbiology. His work deals with latent infection by bacteriophages, kinds of viruses that invade bacteria.

The development of a Medical Supply and Equipment Department, to be completed at the University Hospitals by September 1, has been announced by John B. Warner, Jr., director, University Hospitals. The department will be subdivided into the sections of Central Service, Medical Equipment Repair, and Inhalation Therapy, a newly created division.

UNIVERSITY OF MISSOURI

Dr. Kenneth K. Keown, Professor of Anesthesiology at the University Medical Center, is chairman of the Section on Anesthesiology of the AMA, and at the annual meeting he presented the Chairman's address and was presiding officer for one day of the Scientific Session and for a panel session entitled "The Use of Ventilatory Aids in the Neonate." The meeting was held in New York City.

The School of Medicine administered the Oath of Hippocrates to 80 graduating seniors on June 8. The speaker for the program was Dr. Edmund D. Pellegrino, chairman, Department of Medicine, University of Kentucky. The oath to graduating senior medical students was given by C. Thorpe Ray, M.D., chairman of the Department of Medicine, University of Missouri Medical Center. The School of Nursing awarded the Bachelor of Science in Nursing to 24 graduating seniors this year.

Dr. William D. Mayer, Associate Dean of the School of Medicine and Associate Professor of Pathology, has been appointed to the Association of American Medical Colleges' Committee on Student Affairs. He has been named, also, to head a newly created subcommittee of that group on Communication with Student Organizations. The new committee was formed to provide an appropriate channel for communicating with national medical student groups such as AΩA, the national medical fraternities and the Student American Medical Association. Its primary objective will be to encourage student interest in medical education and to provide accurate information and guidance concerning medical education to such student groups.

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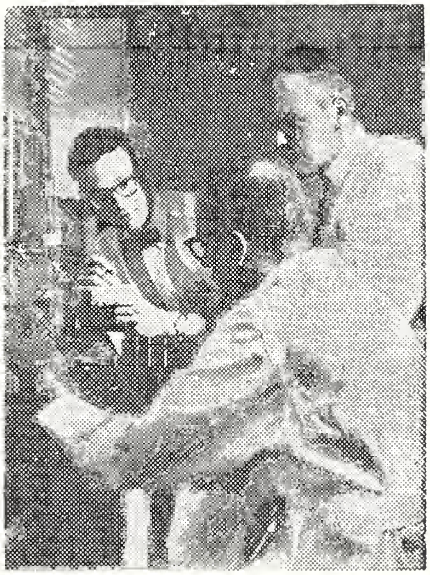

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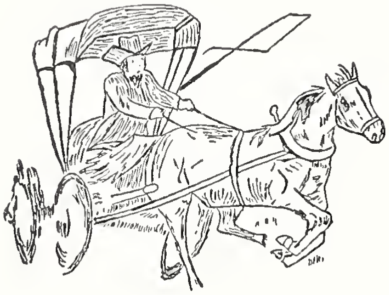

FORTY YEARS AGO

When the House of Delegates of our Association at the Annual Meeting held in Kansas City, May 4-7, 1925, elected Dr. Emmett P. North of St. Louis as President of the Association for the ensuing year, they conferred this honor upon one who has been identified with the progressive movements of the organization ever since he graduated in medicine. The honorary degree of D.Sc. was conferred upon Dr. Willard Bartlett of St. Louis by his alma mater, the Illinois College. —Dr. John R. Caulk of St. Louis was elected president of the American Urological Association at the meeting held in St. Louis, May 21-23.

Governor Baker has reappointed Dr. Cortez F. Enloe of Jefferson City as Director of the Board of Penal Institutions for a term ending June 19, 1929.—Dr. Cyril P. Vores of Unionville recently opened an eight-bed hospital in that city. By reason of the shortage of funds available for the maintenance of the State University during the current biennial period, it has been found necessary to discontinue the Public Health Laboratory service, effective July 1, 1925.—Dr. T. A. Kyner of Kansas City has been appointed Superintendent of General Hospital to succeed Dr. John M. Frankenburger who resigned July 1.

TWENTY-FIVE YEARS AGO

The great metropolis, New York City, was host to the AMA June 10 to 14 on the occasion of its 91st Annual Session. Registered at the Session were 12,864 persons, the largest attendance in the history of the Association. The last meeting held in New York City was in 1917 and had an attendance of 5,147.

In the House of Delegates the Missouri State Medical Association was represented by: Drs. A. R. McComas, Sturgeon; James R. McVay, Kansas City; H. L. Kerr, Crane, and Robert E. Schlueter, St. Louis. Dr. J. Archer O'Reilly, St. Louis, was a delegate from the Section on Orthopedic Surgery and Dr. E. H. Skinner, Kansas City, was a delegate from the Section on Radiology. Dr. Alphonse McMahon, St. Louis, served in his capacity as Vice President. San Francisco was chosen as the place of meeting in 1943.

Dr. Nathan B. Van Etten of New York, in his address before the House of Delegates, said the AMA has offered "all of its organization facilities to the federal government and stands ready to cooperate to the limit of its ability in all measures of national defense. . . . If we must enter a new war as combatants, we shall do so whole heartedly." At the same time Dr. Van Etten warned against a threatened "pagan" invasion, not only with guns but with ideas, that would force foreign systems of medical practice upon America's physicians. Dr. Rock Sleyster of Wauwatosa, Wisconsin, retiring President, called upon physicians to stand ready to offer their services to the nation as they did in the World War.

TEN YEARS AGO

Alpha of Missouri chapter of Alpha Omega Alpha, the Washington University School of Medicine chapter of the national medical honor society, initiated 15 members at an annual banquet April 20. Dr. David Goldring, Associate Professor of Pediatrics, gave an informal address.

Senior medical students initiated were: Oliver Abel, III; A. Robert Arnstein; H. Phil Gross; Stephen I. Morse; David G. Murray; James C. Peden, Jr.; and Nina L. Steg. Junior class initiates were: Harold R. Silberman, president-elect of Alpha Omega Alpha for the school year 1955-56; Daniel M. Divack, vice president-elect; and Robert M. Filler. Faculty members initiated were: Drs. Goldring; Lauren V. Ackerman, Professor of Pathology and of Surgical Pathology; John R. Smith, Associate Professor of Internal Medicine, and W. Stanley Hartroft, Professor of Pathology and head of the department, who is an honorary member. Dr. Theodore J. Fuller, a recent graduate, also was initiated.

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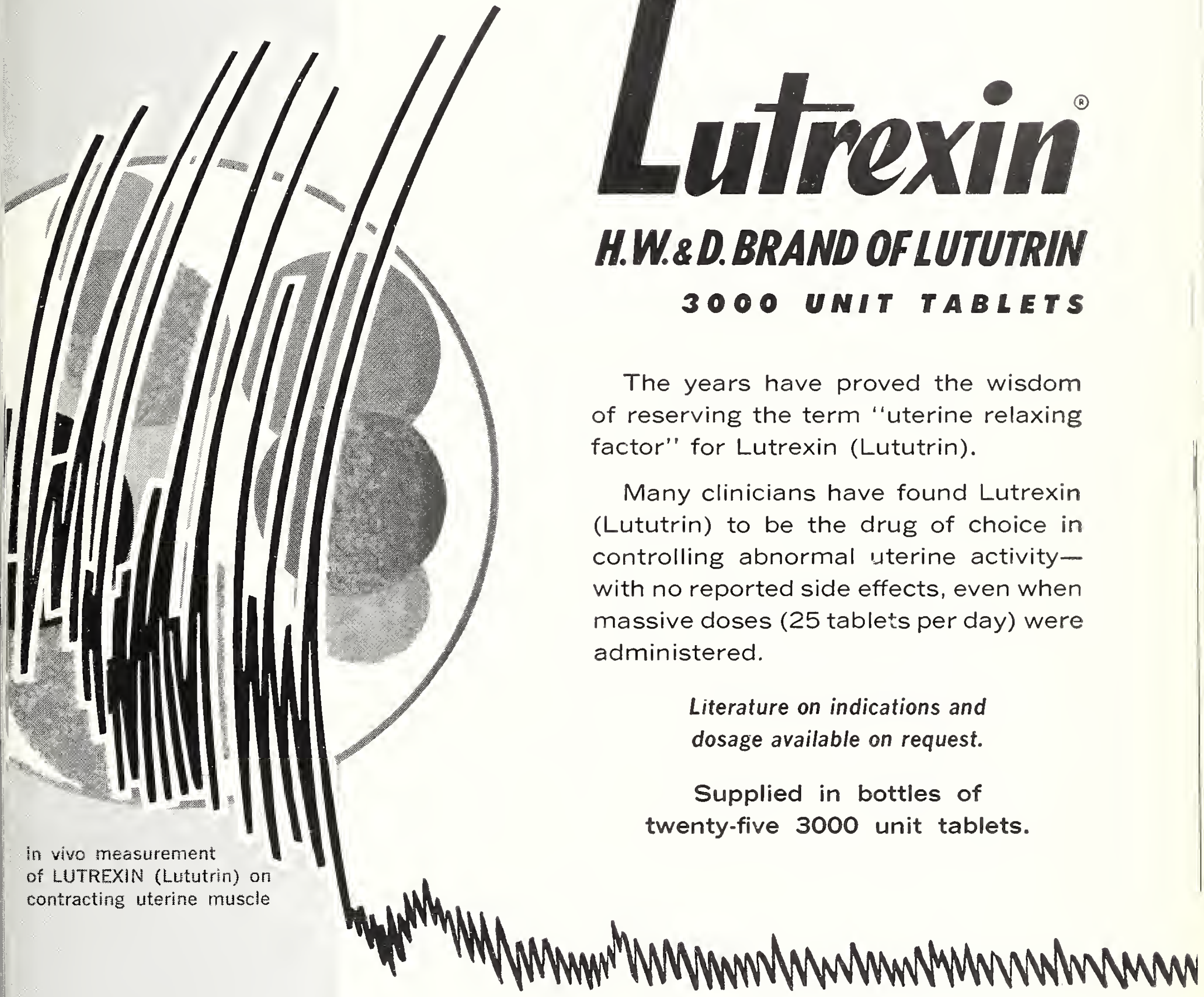

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Information for Contributors

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medical melange

Notes of interest from Here . . . . and There

Missouri has become the first state in the nation to receive a federal Community Mental Health Center grant. Dr. George A. Ulett, director of the State Division of Mental Diseases, reports that the $691,000 grant will allow completion of the 120-bed Mid-Missouri Mental Health Center in Columbia. The Center will be part of the University of Missouri School of Medicine complex.

W. J. Shaw, M.D., of Fayette is spending two months in Viet Nam under a program jointly sponsored by the State Department and Medico. The program is designed to supply medical care for civilians in that war-torn country. Doctor Shaw retired to a limited practice in Columbia early this year after nearly 40 years of full-time practice in Fayette. He helped organize the American Academy of General Practice in 1947 and served one term as president of that organization.

The Annual Fall Conference of the Kansas City Southwest Clinical Society will be held October 4-6 in Kansas City. The 1965 program is acceptable for 20½ accredited hours by the AAGP.

Eli Lilly and Company now offers Duracillin® A.S. (sterile procaine penicillin G aqueous suspension, U.S.P.) in a 1,200,000-unit Hyporet® (disposable syringe, Lilly). This form of the long-acting penicillin is particularly useful in those kinds of infection which call for large doses. For greater flexibility in dosage, the new Hyporet No. 10 is marked with a blue line which permits the giving of a dose of 1,000,000 units.

The long-acting, non-narcotic cough suppressant dextromethorphan has been combined with glyceryl guaiacolate in the formulation of Robitussin-DM, new addition to A. H. Robins' "family" of OTC cough preparations. The cherry-colored, cherry-vanilla flavored liquid has been introduced in bottles of four ounces. Robitussin-DM contains, in each 5 cc. teaspoonful, glyceryl guaiacolate 100 mg., dextromethorphan hydrobromide 15 mg., in a palatable aromatic syrup, alcohol 1.4 per cent.

The anabolic hormone stanazolol produced significant weight increases and improved appetites in a group of elderly women patients in a geriatric home, a British investigator states in *Practitioner* (194:530, 1965). Stanazolol is manufactured and distributed in the United States by Winthrop Laboratories under the brand name of Winstrol. During an 8-week, double-blind, cross-over trial, weight gained by the women was "significantly higher" than when they were taking a placebo, according to Dr. Kenneth Bew, who carried out the study in Belfast. Improvement in their feeling of well-being, appetite and energy is called highly significant.

A scientific paper from the October 1964 issue of MISSOURI MEDICINE is the basis for a feature article in the July 1965 issue of the *Missouri Conservationist*. The original paper, "Characteristics of Snakebites in Missouri," was written by Henry M. Parrish, M.D., from the Department of Community Health and Medical Practice, University of Missouri School of Medicine. James F. Keefe, editor of the *Conservationist*, draws heavily on Doctor Parrish's paper and presents an interesting and informative article for lay consumption.

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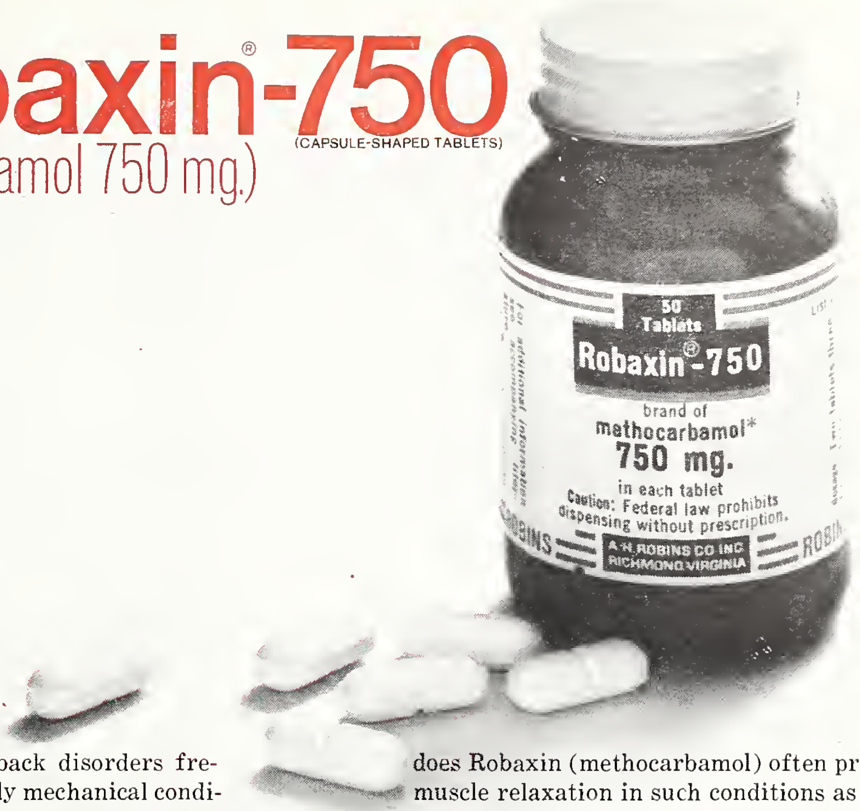

It has been noted that low-back disorders frequently "... are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "... muscle relaxants are useful in chronic as well as acute low backaches."[4]

Robaxin (methocarbamol) has relieved spasm and pain in cases where the patient "had not responded to conservative measures prior to drug therapy."[6] A 100-patient study showed that Robaxin provided greater relief of muscle spasm for a longer period of time without adverse reactions "than any other commonly used relaxants...."[6]

A well-tolerated[7] skeletal muscle relaxant with "specificity of action,"[7] methocarbamol leaves normal muscle tone unaffected. Moreover, there is little likelihood of sedation[7]—a considerable advantage for the patient who must remain active and alert on his job.

Significantly, clinicians advise using a muscle relaxant "early and in adequate dosage."[8] In this regard, Robaxin (methocarbamol)—*particularly in the 750 mg. dosage (2 tabs. q.i.d.)*—offers optimal therapeutic benefits without a significantly increased incidence of side effects. And just as it works well as part of the basic regimen for low-back pain, so also does Robaxin (methocarbamol) often provide muscle relaxation in such conditions as musculoskeletal injury, chronic neurological disorders, and orthopedic situations.

BRIEF SUMMARY—Robaxin (methocarbamol) Tablets: Contraindicated in hypersensitive patients. Side effects (light-headedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently.

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REFERENCES: 1. Soto-Hall, R.: Med. Sci. *14*:23, 1963. 2. McCarrol, H.R.: Paper read at the Annual Meeting of the American Medical Association, Atlantic City, June 16-20, 1963. See Medical News: J.A.M.A. *185*:39 (July 13), 1963. 3. Gordon, E.J.: Med. World News *5*:54, 1964. 4. Cozen, L.: GP *26*:82, 1962. 5. Larson, C.B.: Postgrad. Med. *26*:142, 1959. 6. Forsyth, H.F.: J.A.M.A. *167*:163, 1958. 7. Weiss, M., and Weiss, S.: J. Amer. Osteopath. Ass. *62*:142, 1962. 8. Rowe, M.L.: J. Occup. Med. *2*:219, 1960.

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medical melange (cont'd.)

The Dean of the University of Missouri School of Medicine, Vernon E. Wilson, M.D., has been named a member of the National Advisory Council on Health Research Facilities. The appointment was announced recently by Surgeon General Luther L. Terry. The Council is composed of scientists, scientific administrators and civic leaders; and advises the Surgeon General on matters involving applications for research construction grants and broad program policies.

A disposable sigmoidoscope is now available from Smith Kline Instrument Company. First of its kind, the "Visiline" Disposable Sigmoidoscope eliminates the unpleasant and time-consuming task of scope cleaning and helps ensure immediate availability of clean, ready-to-use scopes. In addition, the disposable sigmoidoscopes avoid the risk of transferring pathogens from one patient to another. The new device is molded of high-strength, shatterproof polyethylene. Its dimensions are standard: 25 centimeters long and 21 millimeters in diameter. Its lumen is brushed to eliminate glare.

Routine immunization of all children with measles vaccine has been urged by the American Academy of Pediatrics. The Academy's Committee on the Control of Infectious Diseases has endorsed the five immunization schedules outlined by the U. S. Public Health Service Advisory Committee on Immunization Practices. These include live attenuated vaccine, live attenuated vaccine plus measles immune globulin, live, further attenuated vaccine, inactivated vaccine, and inactivated vaccine followed by live attenuated vaccine. The Committee urged "all physicians and public health personnel to take whatever steps are necessary to see that all susceptible children receive measles vaccine. Vigorous endorsement and execution of this aim by physicians and responsible authorities should eliminate measles by 1970."

The American Pharmaceutical Association has prepared a brochure for pharmacists and other health practitioners outlining the requirements of the new federal drug abuse control law. Entitled "HR 2 AND YOU," the brochure presents highlights of the Drug Abuse Control Amendments of 1965 as they affect health practitioners. It is designed to inform those who must practice under the new law as to the requirements established and to acquaint them with their individual responsibilities. Single copies are available free from APhA, 2215 Constitution Avenue, N.W., Washington, D. C. 20037.

SERAX® from Wyeth Laboratories, a more "flexible" new tranquilizer, has been approved under federal regulations which require manufacturers to prove both safety and efficacy of a new drug. The Philadelphia pharmaceutical manufacturer has received authorization from the Food and Drug Administration to market SERAX. Supplies of the drug are available now at distribution centers across the country. The new drug has been tested clinically in treating 4,240 patients and has been proven effective in patients displaying the symptoms of anxiety.

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Three tablespoonfuls (45 cc.) contain:

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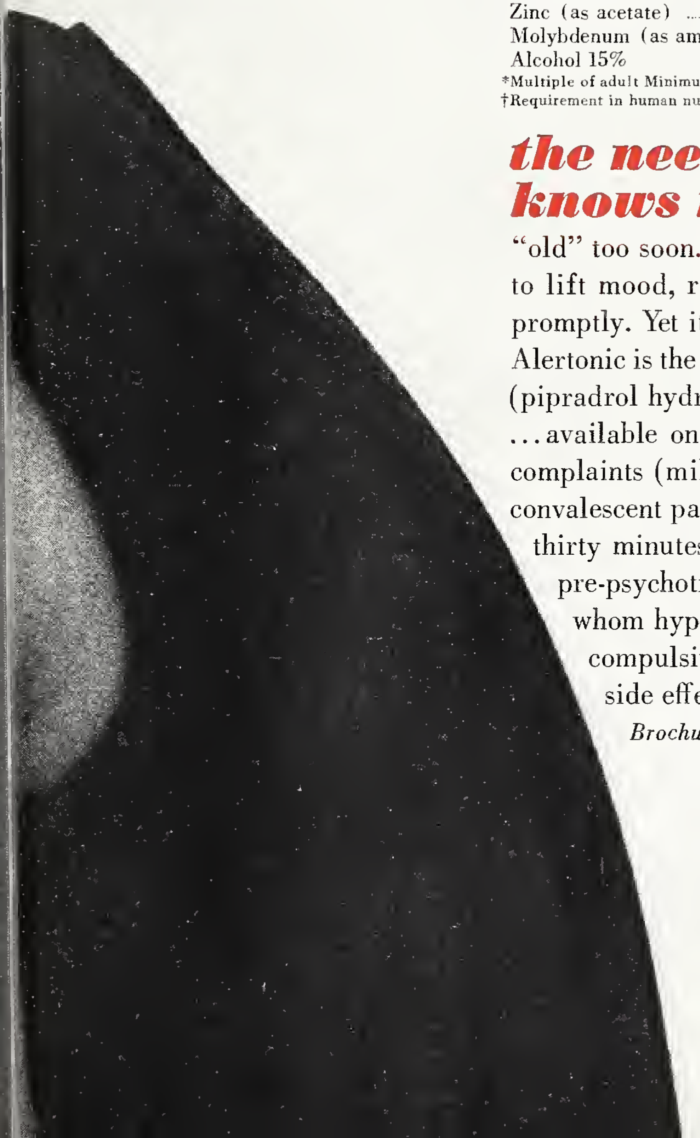

JOSEPH L. FISHER, M.D., ***St. Joseph***

To the Class of 1965

Special Feature

The following is a transcript of the speech delivered by Doctor Fisher to members of the 4th year class of the Missouri University School of Medicine on the eve of their graduation. Although directed to graduating medical students, the message contains some valuable reminders for the physician whose graduation day may be just a fond memory. Doctor Fisher is in the practice of radiology and serves as 1st District Councilor to the Missouri State Medical Association.

It is an honor and a privilege for me to visit with you tonight on the eve of your receiving a medical degree from the University of Missouri School of Medicine. You have reached the first great milestone on the long road of becoming doctors.

This milestone might be likened to having completed the foundation of a home upon which you will lay the floor of internship and residency and then begin to slowly build the superstructure from practical experience, mistakes and hard knocks.

Tomorrow will mark for you the beginning of your careers as doctors; but, in a very real way, this occasion also marks for you an end—an end to something which, up to now, you may have taken for granted. As you sit here tonight you are probably a closer, more harmonious group than will ever exist again, as members of the medical profession. For four years you have lived, worked and learned together—sharing your common experiences and hardships, working for a common goal.

Cling to this closeness, this comradeship, and guard it zealously.

As you leave the University to take up your medical careers, the environmental forces at work around you will become increasingly devious. As you finish your internships and go into private practice, many of you will find yourselves in very different relationships to one another and to other members of our profession. No longer will it be so clearly apparent that you are members of a single professional community. Rather, you will find yourselves in the position of being, in some degree, competitors. Competition may be rough between you and your colleagues as you vie for the patronage and loyalty of the public.

A doctor often is the object of community concern and interest. His personality and his professional ability will be discussed and compared with those of his colleagues. The size of his practice may depend largely on his "community image" or his ability to sell his own personality, over and above his professional competence. He may be drawn into direct competition with another doctor for his patients. This competition may be keen, often leading to misunderstanding and bitterness between members of our profession. These unfortunate circumstances are often triggered by a misstatement or a misquote on the part of a disgruntled patient, who hopes to bait one doctor into criticizing another so perhaps he may have grounds not to pay doctor No. 1 his justly due bill.

I know of circumstances in our own state where two, and in one instance three M.D.'s, practicing in the same small community of a few thousand people, will not speak to each other when meeting face to face, let alone assist each other with their medical problems. What must the lay public think of "educated men" under these circumstances—men who are caught in the web of their petty jealousies and misunderstandings to the point where it often warps their scientific judgment?

You are soon to become members of the great medical fraternity. Watch carefully, lest you step into one of these pitfalls which leads to criticism of a colleague, and in turn, like a boomerang, adversely affects you.

How will the majority of you react to circumstances like these? Will you find yourselves increasingly concerned in areas secondary to the best ideals of the medical profession? Will you find yourselves increasingly concerned with the day to day aspects of augmenting your own practice and less inclined to consider the goals and problems of the medical community as a whole? Will you begin to allow the competitive economic aspects of medical practice to overshadow the broader, more important scientific, indeed scholarly, responsibilities of your profession to the public and to itself? I sincerely hope not!

I would rather hope that, when the time comes for you to go into practice for yourselves, you will look back to your commencement day; and, by sticking close to your *alma mater* and keeping in touch with each other through your alumni organization, you will preserve the comradeship engendered by the past four years of working together. By recalling these memories, you may be stimulated to continue the process of learning in which you have been engaged during the past four years, and you may find inspiration to combine your daily practice with the broad vision and wide perspectives you have shared with fellow students at this university.

At this moment in history, when both the scientific and social aspects of medicine are undergoing such rapid and exciting change, you, as doctors, cannot afford to stand apart from the main stream of your profession. You cannot afford to confine yourselves to competitive interests.

You will have, first of all, a responsibility to your patients at all hours and on all days. It will be your responsibility to see that they obtain the best possible care in the light of the almost daily scientific advances being made in the field of medicine. In order to keep abreast of the newest discoveries and techniques, you will have to continually "touch base" with those places in which research and study are being carried on. You have acquired your first medical strength here at the University of Missouri School of Medicine. May I suggest to you that this is an excellent source for periodic renewal of that strength.

It is not only in the area of science that the medical world is undergoing revolutionary change. A tremendous social change, now hangs over the practice of "free medicine" like a huge black cloud, threatening to destroy the doctor-patient relationship as we have known it. This black cloud is socialism, and with it is "socialized medicine."

The first major break in the tradition of private health care came 70 years ago. A public law in Germany introduced a third party who intruded between the patient and his physician. That intruder was the federal government of Germany.

Since that introduction of socialized medicine, more than 50 other countries have tried various schemes to provide compulsory health care for their citizens. These intrusions have produced a pattern of poor health rather than good health.

The tragedy is, that most of these nations knew of the sad experiences with the prototypes of "free medical care" but plunged ahead anyway in grand defiance of logic, seeking some answer to the problem of giving medical care to all. It was much the same as hiking naked in a snow storm because some expert had prescribed this as the only way to cure a cold. Everyone knew this was not logical, but nothing else worked. Nothing seemed to stop this trend.

Any plan that begins as "free" health care runs into built-in bankruptcy. As a natural result, the people are called upon to pay the whole cost of some treatments and partial cost of most others. Bureaucratic forms, rules, regulations and controls intervene to the point where the physician works for the government and not for the patient. The doctor-patient relationship is then shattered beyond repair.

The German federal minister of labor in 1960, Theodore Blank, said, "It is intolerable for the patient and the dignity of the medical profession to see annually, more than 7-billion marks contributed to compulsory health insurance, and despite all this, sick persons are not adequately taken care of, and the waiting rooms of the doctors are so overcrowded they cannot give anyone proper medical attention."

A major excuse given for national or federal socialized health programs is that voluntary and community programs are degrading to the poor. This argument attacks the so-called "means test." When a less fortunate person needs health care services and applies to a hospital for admission in a voluntary system of medicine, he is asked to declare his inability to pay. This is sometimes referred to as the "pauper's oath." How does a compulsory program improve on that situation? It not only fails to improve upon it, it actually aggravates it.

In a lighter vein, but an example of the situation existing in countries dominated by socialism and communism, is the story of a Romanian doctor and his patient. "I'm afraid I can't help you," the doctor told the ailing man. "If I prescribe a communist-made drug, you have 'had it,' and if I recommend a western-made drug, I hade 'had it.' "

For another look at what happens to medicine when a country becomes collectivistic, let us turn to communist dominated Poland. That country has been involved in the practice of socialized medicine for only a few years, and it is already a dismal flop. For the first time since the end of World War II, there are vacancies in its medical schools. This is most unusual in a nation where there are two applications for every vacany in other fields of study.

Against this dismal failure in socialized medicine, the American system compares as a giant. Where once the world looked to Vienna, Paris, Rome, Berlin and London for medical leadership, they now look to the United States.

And now the United States is about to launch itself upon this socialistic program, unmindful of the eroding effects socialized medicine has upon medical research and blinded to the tragic record of Europe's socialized medicine.

Will we continue to see only a mirage of virtues of socialized medicine, speaking no evil of socialized medicine, hearing no evil of socialized medicine? If we do, we deserve no better than the miseries being suffered in Europe!

As Winston Churchill, the symbol of British resistance in World War II, once said in a meeting with the demoralized French ministers in the bleakest hours of 1940, "No matter what you do, we shall fight on forever and ever and ever!"

Persistency and determination alone are omnipotent. The slogan, "Press on," has solved and always will solve the problems of the human race.

President Theodore Roosevelt paid tribute to those who persist in the face of discouragement and criticism. As a child, his health was quite delicate, and his later determination to rebuild his strength had a marked effect on his character. He understood the persistent man and said, "It is not the critic who counts; not the one who points out how the strong man stumbled, or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena, whose face is marred by dust, sweat and blood, who strives valiantly with great enthusiasm and devotion. His place shall never be with the cold and timid souls who know neither defeat nor victory."

And so it is with free medical men, freedom fighters and men of principle the world over. The battle must be won and re-won every day.

Congratulations to each of you on a job well begun, and a reminder that the job will never be finished.

So, in the years to come, align yourself with organized medicine (your county, state and national societies) and also with your alumni organization. Stay close to the current of scientific development. "Persist in the cause of free medicine and enlightened leadership." Keep in the arena of good medicine, with "your faces marred by dust, sweat and blood—striving valiantly with great enthusiasm and devotion."

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ıld be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning: If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient cannot be seen regularly, when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin® alka are contraindicated in patients with glaucoma.

Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

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JOHN CROWE, M.D., ***Secretary***

Missouri Academy of General Practice

It is hoped that you have reserved the dates of Saturday and Sunday, October 23-24, 1965 to attend the 17th Annual Scientific Assembly of the Missouri Academy of General Practice to be held at the Sheraton-Jefferson Hotel in St. Louis.

The program will include the following: Saturday, October 23, 9:00 a.m. to 10:00 a.m. Annual Business Meeting of the Academy. From 10:00 a.m. to 12:30 p.m., Round Table Discussions: 1. Coronary Heart Disease, James Janney, M.D., St. Louis, Moderator; 2. Urological Problems, Justin Cordonnier, M.D., St. Louis, Moderator; 3. Gastro-Intestinal Complaints, William Knight, Jr., M.D., St. Louis, Moderator; 4. Infections in Children, John C. Herweg, M.D., St. Louis, Moderator. It is suggested that members of the audience move from table to table during the two hour discussion period bringing questions they would like discussed at a particular table. These table discussions will be informal and as practical as the audience wants to make them.

From 2:00 p.m. to 5:00 p.m., Symposium on Obgyn. The speakers and subjects will be: H. L. Riva, M.D., Professor and Chairman, Department of Obgyn, Seton Hall College of Medicine and Dentistry, Medical Center, Jersey City, N. J., "Management of Endometriosis," and "Preventive Medical Measures in Obgyn." T. L. Montgomery, M.D., Professor and Chairman, Department of Obgyn, Jefferson Medical College, Philadelphia, Pa., "The Diagnosis and Management of Breast Lesions in the Practice of Obgyn," and "New Concepts Regarding the Welfare of the Fetus in Utero." David G. Hall, M.D., Associate Professor and Chairman, Department of Obgyn, Missouri University School of Medicine, Columbia, "The Present Status of Breech Presentations." George Wulff, Jr., M.D., Assistant Professor in Clinical Obgyn, Washington University School of Medicine, St. Louis, "Intrauterine Contraceptive Devices vs. Population Explosion."

Sunday, October 24, 9:00 a.m. to 12:15 p.m., General Scientific Session. The speakers and subjects are: Maurice H. Stauffer, M.D., Assistant Professor of Medicine, University of Minnesota School of Medicine, Minneapolis, Minnesota, "Viral Hepatitis: Problems in Diagnosis and Management," and "Unusual Causes of Jaundice Simulating Hepatitis." Neal Bricker, M.D., Director, Renal Division, Washington University School of Medicine, St. Louis, "The Clinical Use of Diuretics." Lillian Recant, M.D., Associate Professor of Medicine and Preventive Medicine, Washington University School of Medicine, St. Louis, "Current Thoughts on Diabetes." Two presentations on "Cancer" by an out-of-state speaker to be sponsored by the Missouri Division of the American Cancer Society.

From 1:30 p.m. to 4:30 p.m., Symposium on Chest Diseases. The speakers and subjects are: Ross C. Kory, M.D., Professor of Clinical Research, Marquette University School of Medicine, Wood Veterans Administration Hospital, Milwaukee, Wisconsin, "Clinical Aspects of Pulmonary Function Testing," and "Functional Evaluation of Pulmonary Insufficiency." H. S. Van Ordstrand, M.D., Department of Pulmonary Disease, Cleveland Clinic, Cleveland, Ohio, "The Gains and Limitations of Newer Diagnostic Techniques in Lung Diseases," and "Auto Immune Diseases of the Lungs." Hector W. Benoit, Jr., M.D., Thoracic Surgeon, Kansas City, "Obstructive Lesions of the Esophagus—Their Clinical Evaluation and Management." James Mackenzie, M.D., Professor of Thoracic Surgery, University of Missouri Medical School, Columbia, "The Surgical Implications of Emphysema."

The Annual President's Installation Banquet will be held on Saturday night, October 23, beginning at 7:30 p.m. The featured speaker for the evening will be, Mr. "Timothy Hays" from Whoopup, Missouri.

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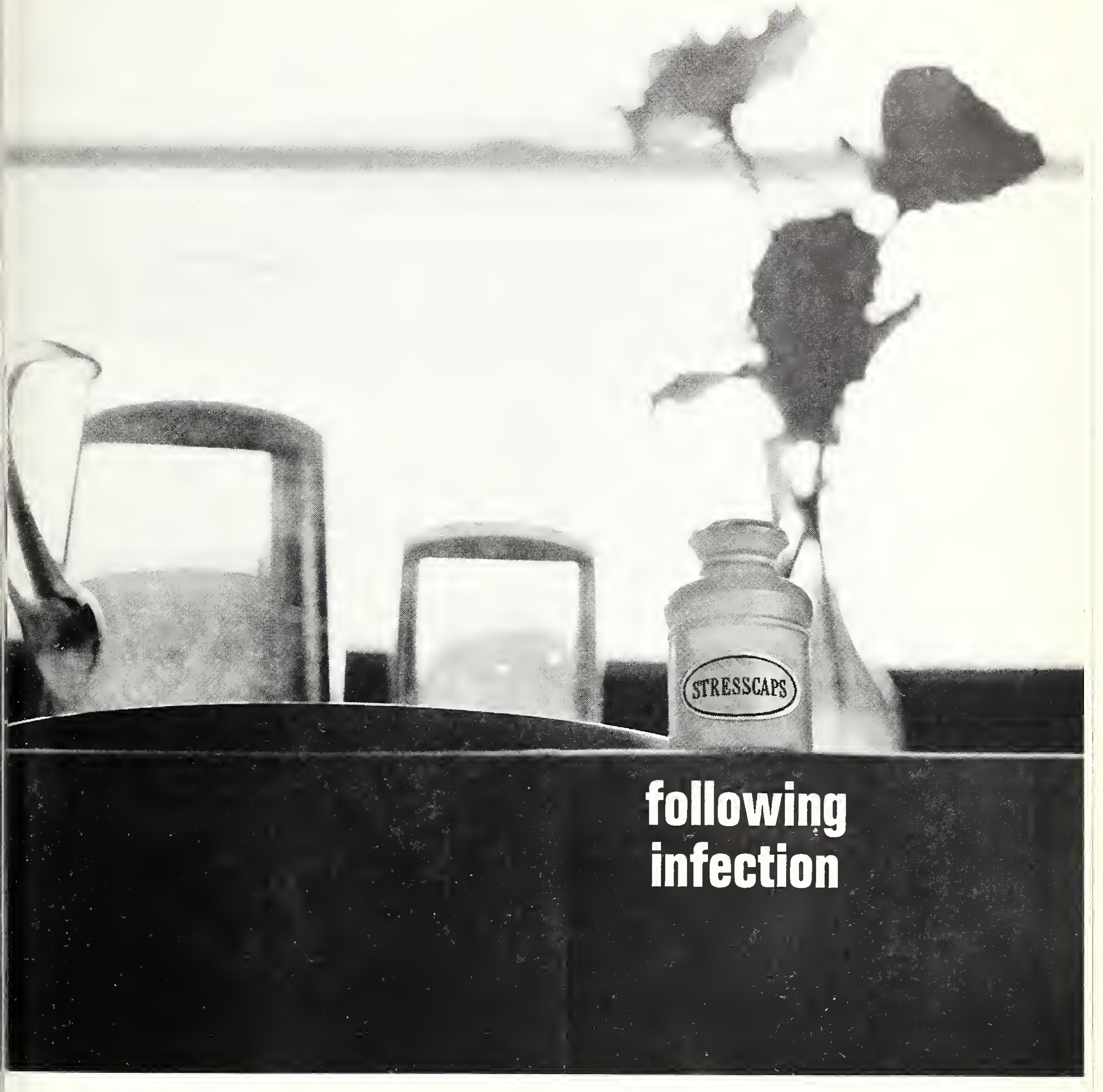

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New Members

John D. Arnold, M.D., 24th & Cherry, Kansas City, has become a member of Jackson County Medical Society. Dr. Arnold is a native of Bradford, Ohio, received his preliminary education at the University of Chicago and his M.D. degree at the University of Chicago in 1946. He specializes in internal medicine.

James B. Barker, M.D., 4177 Broadway, Kansas City, has become a member of Jackson County Medical Society. Dr. Barker is a native of Miami, Oklahoma, received his preliminary education at Memphis State University and his M.D. degree at the University of Tennessee in 1955. He specializes in otolaryngology.

Robert L. Colbert, M.D., 720 Davis Rd., Sikeston, has become a member of Semo County Medical Society. Dr. Colbert is a native of Memphis, Tennessee, received his preliminary education at Springfield College and his M.D. degree at the University of Tennessee in 1959. He specializes in radiology.

Galen B. Cook, M.D., 107 W. Broadway, Columbia, has become a member of Boone County Medical Society. Dr. Cook is a native of Independence, Missouri, received his preliminary education at Washington University and his M.D. degree at Washington University in 1955. He specializes in oncologic surgery.

Mark W. Devine, Jr., M.D., 751 E. 63rd St., Kansas City, has become a member of Jackson County Medical Society. Dr. Devine is a native of Leavenworth, Kansas, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1958. He specializes in otolaryngology.

Thomas H. Hendren, M.D., 1504 Nancy Lane, Liberty, has become a member of Clay County Medical Society. Dr. Hendren is a native of Kansas City, received his preliminary education at William Jewell College and his M.D. degree at Tulane University in 1960. He specializes in surgery.

M. Richard Katz, M.D., 216 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Katz is a native of Kansas City, Kansas, received his preliminary education at Washington University and his

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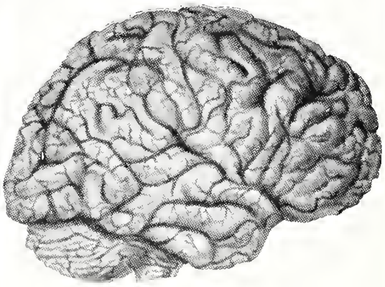

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M.D. degree at Washington University in 1955. He specializes in neurology.

Richard J. Lanning, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Lanning is a native of Ste. Genevieve, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1958. He specializes in urology.

Lottie B. McWherter, M.D., Argyle Bldg., Kansas City, has become a member of Jackson County Medical Society. Dr. McWherter is a native of Emporia, Kansas, received her preliminary education at Kansas State Teachers College, and her M.D. degree at the University of Kansas in 1957. She specializes in internal medicine.

Byron J. Masterson, M.D., 420 Nichols Parkway, Kansas City, has become a member of Jackson County Medical Society. Dr. Masterson is a native of Hayti, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at Washington University in 1958. He specializes in obstetrics, gynecology.

Robert G. Muth, M.D., 24th & Cherry, Kansas City, has become a member of Jackson County Medical Society. Dr. Muth is a native of Baltimore, Maryland, received his preliminary education at Loyola College and his M.D. degree at the University of Maryland in 1956. He specializes in internal medicine.

Herbert J. Schmidt, M.D., Medical Arts Bldg., Joplin, has become a member of Jasper County Medical Society. Dr. Schmidt is a native of St. Louis, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1959. He specializes in obstetrics, gynecology.

Malcolm Stroud, M.D., Barnes Hospital Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Stroud is a native of Sutton Coldfield, England, received his preliminary education at Handsworth, Birmingham, England, and his M.D. degree at the University of Birmingham, England in 1945. He specializes in otolaryngology.

Thomas C. Thomas, M.D., Buckner, has become a member of Jackson County Medical Society. Dr. Thomas is a native of Kansas City, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1962. He specializes in general practice.

Ronald M. Turner, M.D., 1612 W. Truman

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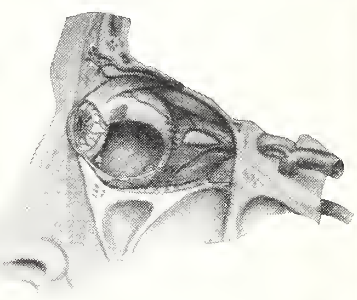

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Rd., Independence, has become a member of Jackson County Medical Society. Dr. Turner is a native of Aruba Netherlands, W. Indies, received his preliminary education at the University of Kansas and his M.D. degree at St. Louis University in 1959. He specializes in general practice.

J. Leslie Walker, M.D., 100 N. Euclid Ave., St. Louis, has become a member of St. Louis Medical Society. Dr. Walker is a native of Memphis, Tennessee, received his preliminary education at Vanderbilt University and his M.D. degree at the University of Tennessee in 1960. He specializes in obstetrics, gynecology.

Robert D. Williams, M.D., Smithville, has become a member of Clay County Medical Society. Dr. Williams is a native of Mound City, Missouri, received his preliminary education at Central Missouri State College and his M.D. degree at the University of Missouri in 1959. He specializes in surgery.

Pun Fai Yuen, M.D., 2200 W. Broadway, Columbia, has become a member of Boone County Medical Society. Dr. Yuen is a native of Hong Kong, received his preliminary education at Westminster College and his M.D. degree at St. Louis University in 1960. He specializes in general surgery.

Horst Zekert, M.D., 3654 S. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Zekert is a native of Steinschoenau, Czechoslovakia, received his preliminary education at the University of Munich and his M.D. degree at the University of Munich in 1952. He specializes in internal medicine.

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WILFRED E. WOOLDRIDGE, M.D., *and*
ERNEST LORENC, M.D., *Springfield*

Skin Cancer Treated With Combined Superficial X-Ray and Gamma Radium Rays

Case Reports

Basal and squamous cell skin cancer is managed in a variety of ways, as it should be, because it is easily accessible, it follows a relatively benign course and is usually treated in an early stage. The method of treatment in a given instance may, therefore, depend not only on the type, site and stage of a given lesion but also on the training of the particular physician in whose hands rests the responsibility of treatment.

In some instances one type of treatment will be clearly superior, while in others a choice of modalities, all equally good, may exist. The patient benefits when all forms of treatment may be available to him through the combined opinions of a Tumor Board or when he is under the care of a therapeutist whose training and experience allows him to choose either the surgical, electrosurgical or radiologic approach to a particular problem.

Throughout our experience, which embraces several thousand cases of basal and squamous cell skin cancer, we have arrived at the generally accepted conclusion that all the above-mentioned forms of treatment can yield satisfactory results when a choice of treatment is wisely made and that treatment is well executed. A rough estimate of our own experience would be that we treat approximately one-third of lesions with electrodesiccation and curettage followed by the application of an antimitotic, one-third of lesions by surgical excision and the remaining one-third by radiation.

Generally, those lesions treated with electrodesiccation, curettage and an antimitotic are small. The advantages of this treatment are obvious. Treatment can be performed quickly, inexpensively and with little distress and incon-

An interesting and well presented report on the successful use of combined superficial X-ray and gamma radium rays in treatment of basal and squamous cell skin cancer. General techniques of treatment and specific cases are described. The authors emphasize that surgery and electrosurgery still have a definite place in treatment of skin cancer and that the final decision on the type of treatment to be used in any given case must be based on the size, type and location of the lesion. Doctors Wooldridge and Lorenc are in the private practice of medicine and both are Consultants in Dermatology, University of Missouri School of Medicine. Doctor Wooldridge is also Visiting Lecturer, University of Oklahoma School of Medicine.

venience to the patient. The antimitotic used is either podophyllin[1, 2] or, more often, Vitamin K_5 (4-amino-2-methyl-1-naphthol hydrochloride) as employed by Belisario.[3, 4] Those treated with excision are the cases in which closure with undermining is no problem and in which no special surgical techniques are required. An additional group, demanding complicated surgical treatment, is better treated in more competent hands. The remainder, those treated with radiation, comprise the group to which we devote this article.

The Case for Combined Radiologic Treatment

The treatment of skin carcinoma by radiation is well founded. Dermatologists were among the very earliest to employ radiotherapy for malignant disease. Sjogren,[5] in 1899, exhibited possibly the first case of skin cancer to be treated with X-rays. By 1903 Pusey and Caldwell had published a comprehensive text which reported 83 cases of skin cancer treated by Pusey.[6]

More recent, however, has been the employment of two sources of radiation in the treatment of skin cancer. This use is based upon the concept of tissue tolerance of two wave lengths of ionizing radiant energy being more satisfactory than a total dose of a single wave length. This idea was initiated by the studies of Quimby and Pack[7] and has been amply confirmed by the extensive clinical experience of Lamb and others.[8-13] By the technique of combined forms of radiation, one can bring treatment to bear upon skin cancers, either primary or recurrent, which is not only well tolerated by the tissue but which will also result in almost 100% of cures. Such results are appreciably better than are found in many published articles which report cure rates of 90% or less.[14-17] This is especially true when one considers that the lesions we treat with combined forms of radiation are those considered too formidable for electrosurgery or simple excision, but which are more simply handled than by complicated or multistage surgical treatment necessitating hospitalization and appreciable morbidity.

Materials and Method

The cases reported in this article consist of skin cancers treated by combined superficial X-ray and gamma radium ray therapy in a five year period, 1954 through 1958. Carcinoma of the lip is excluded from this series and will be reported in a separate communication. (October issue of Missouri Medicine.) The total number of lesions treated during these years was 580. Of this number, 525 lesions were followed at intervals throughout a period of two years. In our following of cases of skin cancer we have found the two year period to be sufficient. Magnusson[18] and Katz *et al*[19] have found a three year period advisable but, neither in this series nor subsequently in a much larger series which is under study, have we found a single instance of recurrence after two years have elapsed following treatment. We believe that this conclusion is well founded for many of the patients reported have been examined for subsequent lesions long after the following period had expired.

Included in the total of 580 lesions were 415 instances of basal cell carcinoma and 165 of squamous cell carcinoma. Microscopic examination of biopsy material was performed in all cases except a few in 1954. The distribution of these lesions is shown in Table 1. The majority were previously untreated. Some were recurrent, however, and the nature of previous treatment is noted in Table 2.

TABLE 1
Distribution of Lesions

Nose	159
Cheek	215
Temple	50
Forehead	35
Neck	44
Ear	46
Eyelid	19
Hand	11
Leg	1
Total	580

TABLE 2
Prior Treatment of Recurrent Lesions

Surgical	6
Electrodesiccation	29
X-ray	6
Caustic	1
Unknown	3
Total	45

The radiation delivered to the tumor site in this series of cases was accomplished in two ways. The preferable treatment consisted of an initial exposure of 2,000 roentgens of superficial X-ray, immediately followed by the implantation of low-intensity, interstitial radium needles for five days. This treatment total consisted of 5,500-6,000 roentgens. The radium dosage was determined from the tables of Paterson[20] and Meredith,[21] and frequent checks of technique were made with a Siemens Gammameter. The interstitial implantation of low-intensity needles was our treatment of choice because of the more satisfactory depth dose with sparing of the overlying skin. It was also in keeping with the detailed studies of 1,611 cases of skin cancer by Magnusson,[22] as well as the conclusions of Ebenius.[23] In certain areas, however, it was learned that the tissues are not optimally tolerant of interstitial radiation. These sites (hands, forehead and ears) were treated with two 1500 roentgen exposures of X-ray given 72 hours apart. During the interim between X-ray treatments, radium was surface-applied and the total dosage administered was again 5,500-6,000 roentgens. It was delivered, however, in a period of three days as compared with the five day interstitial treatment.

Although squamous cell carcinoma of the skin is generally classed as being more radioresistant than basal cell carcinoma, we have found that there is no need to differentiate between the two, so far as treatment is concerned. Basal cell carcinoma often extends fascicles of cells into the surrounding tissues where they are neither visible nor palpable. It is this behavior of certain basal cell carcinomas which led Magnusson to the conclusion, in his large and intensively studied series, that basal cell carcinoma was responsible for a higher recurrence rate than was squamous cell carcinoma of the skin.[24] We wholeheartedly agree with this viewpoint. Furthermore, concerning irradiation, basal cell carcinoma may be a problem because or its propensity to cause cicatrization in which tissue nests of cells acquire greater radioresistance.

As might be expected, our patients were predominantly of the older age group (Table 3). Squamous cell carcinoma in these individuals occurred much more frequently when the skin had been subjected to much solar exposure throughout the years. Basal cell carcinoma did not follow the solar exposure pattern as closely. Not only is basal cell carcinoma found on unexposed areas of the skin but, conversely, basal cell carcinoma is almost unknown on the heavily exposed skin of the dorsum of the hand, a site of very frequent carcinoma of the squamous cell type.

TABLE 3
AGE DISTRIBUTION OF PATIENTS

20-30	4
30-40	26
40-50	57
50-60	81
60-70	130
70+	224
Total	522*

* More than one lesion occurred in several patients making the number of lesions 580.

CASE REPORTS

Because of the great variety of problems presented by the histological type, size and location of skin cancers, we present the following illustrative case histories:

Case # 1: White female, age 60. Basal cell carcinoma, 18 months' duration. Nodule, center of forehead, freely moveable, asymptomatic, untreated, 12 × 15 mm. in diameter.

Treated with combined superficial X-ray (two exposures) plus surface-applied radium. Total dosage, 5,500-6,000 roentgens in three days. Followed for two years with no complications and has remained well (Fig. 1).

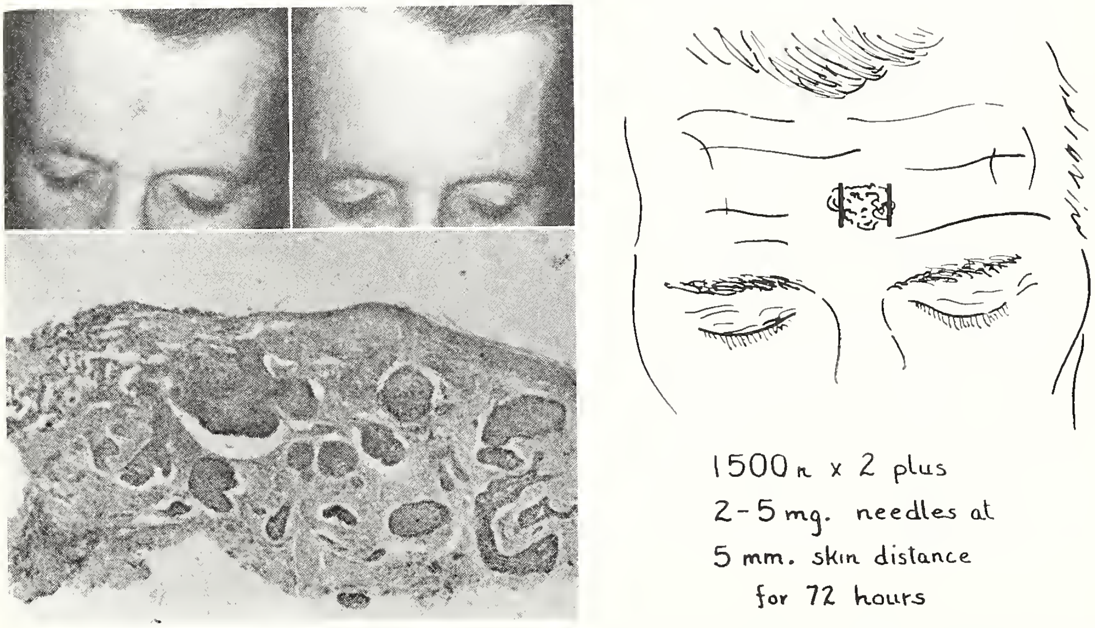

Fig. 1 Photographs of basal cell carcinoma in Case # 1 prior to treatment and same area 15 months after treatment. Microphotograph of biopsy tissue. Drawing demonstrates method of treatment using surface-applied radium.

Case # 2.: White male, age 78. Recurrent squamous cell carcinoma, right side of nose, 20 months' duration. Rapidly growing. Four months after appearance, treated with electrodesiccation followed by prompt recurrence. Three months after first treatment, excision performed and recurrence again noted within one month. Referred to us for further treatment. Lesion clean, ulcerated over entire extent, 12 × 14 × 3 mm. in diameter. Seemed fixed to underlying structures but there was no evidence of involvement of mucosal surface.

Treated with combined superficial X-ray (one exposure) plus interstitial, low-intensity radium needles. Total dosage 5,500-6,000 roentgens in five days. Followed for two years without complications and has remained well (Fig. 2).

Case # 3: White female, age 77. Basal cell carcinoma, right cheek, four years duration. Slowly growing, untreated, 30 × 35 mm. in diameter.

Treated with combined superficial X-ray (two exposures) plus surface-applied radium. Total dosage, 5,500-6,000 roentgens in three days. Pattern of radium needles adjusted with Gammameter to produce homogenous treatment field within ±15%. Followed for 30 months without complications and has remained well.

Case # 4: White female, age 90. Basal cell carcinoma, one lesion on each temple, ten years' duration. Lesions slowly growing, secondarily infected, previously untreated. Lesion on right, 10 × 35 mm. Lesion on left 18 × 40 mm.

Each lesion treated with combined superficial X-ray (two exposures) plus surface-applied radium. Total dosage, 5,500-6,000 roentgens in three days. Pattern of radium needles adjusted with Gammameter to produce homogenous treatment field within ±15%. Died of cerebrovascular disease 22 months after treatment without evidence of recurrence in treated sites.

Case # 5: White female, age 80. Squamous cell carcinoma, left cheek, two to three years' duration. Rapidly growing untreated lesion, 15 × 25 mm. in diameter.

Treated with combined superficial X-ray (one exposure) plus interstitial, low-intensity radium needles. Total dosage 5,500-6,000 roentgens in five days. Last seen four years after treatment. Remained well and had no complications. It can be noted from Fig. 5, that a large lesion on the nose was cured also. Microscopic examination revealed this to be a highly anaplastic, undifferentiated carcinoma. Treatment was identical to that of the cheek lesion (Fig. 3).

Case # 6: White male, age 75. Basal cell carcinoma, nose, one year's duration. Rapidly growing, untreated, 15 × 18 mm. in diameter.

Treated with combined superficial X-ray (one exposure) plus interstitial, low-intensity radium needles. Total dosage 5,500-6,000 roentgens in five days. Followed for two years without complications or recurrence (Fig. 4).

Case # 7: White male, age 50. Squamous cell carcinoma, nose, five weeks' duration. Clinical impression was that of keratoacanthoma. Untreated, 8 mm. in diameter.

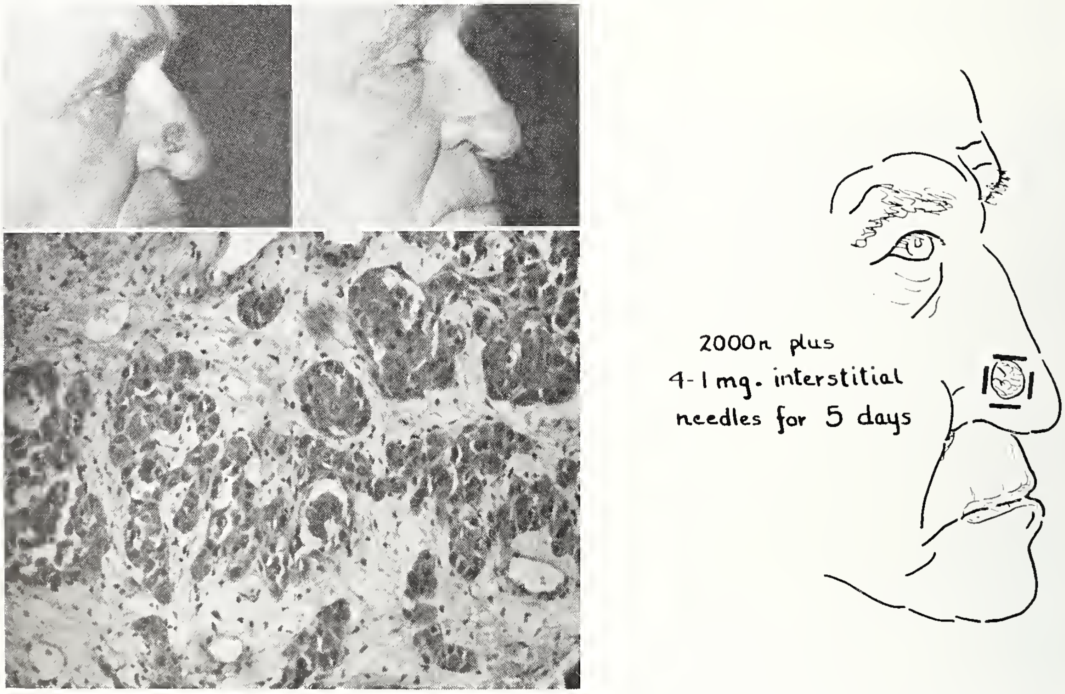

Fig. 2 Photographs of squamous cell carcinoma in Case # 2 prior to treatment and same area 12 months after treatment. Microphotograph of biopsy tissue. Drawing shows method of treatment with radium needles.

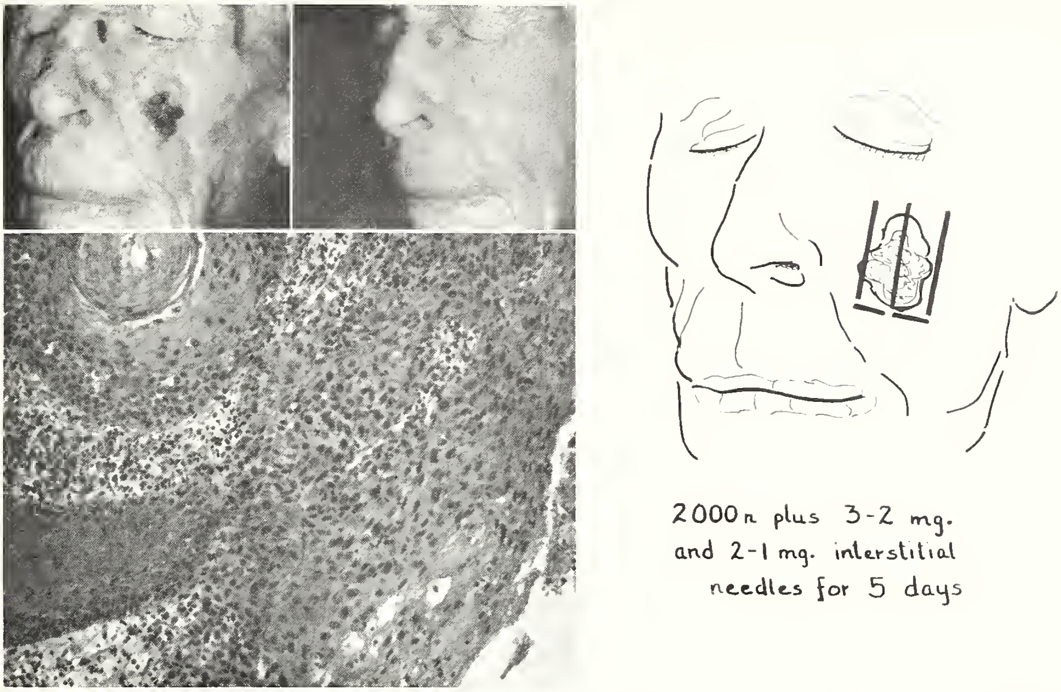
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Fig. 3 Photographs of squamous cell carcinoma in Case # 5 prior to treatment and same area 20 months after treatment. Microphotograph of biopsy tissue. Drawing shows method of treatment with radium needles.

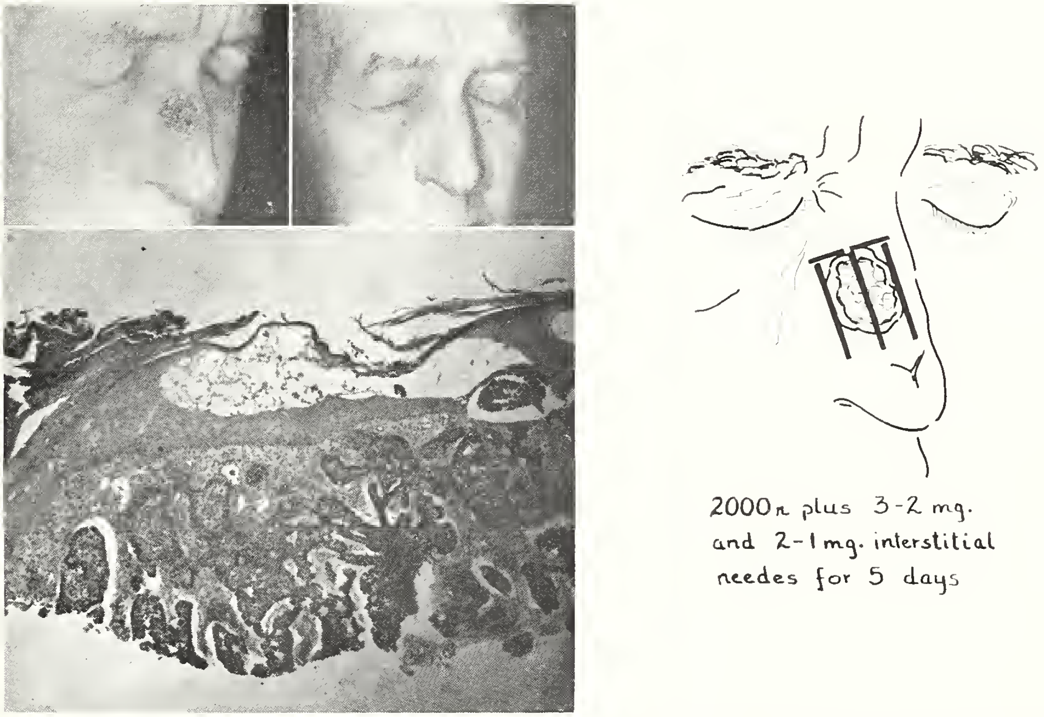
2000r plus 3-2 mg.
and 2-1 mg. interstitial
needes for 5 days

Fig. 4 Photographs of basal cell carcinoma in Case # 6 before treatment and same area 16 months after treatment. Microphotograph of biopsy tissue. Drawing demonstrates method of treatment using surface-applied radium.

Treated with combined superficial X-ray (one exposure) plus interstitial low-intensity radium needles. Total dosage 5,500-6,000 roentgens in five days. Followed for three and a half years without complication or recurrence (Fig. 5).

RESULTS OF TREATMENT

Of a total of 580 treated lesions, two year followup was completed on 525. Of the number completely followed, 523 were cured; a cure rate of 99.4%. Fifty-five lesions (9.5%) were lost to followup because of death—or for other reasons. Of this group of 55, more than 20 were accounted for by relatives who, by interview or by mail, assured us that the treated sites were normal at the time of the patient's death. These 55 lesions are not included in the final tabulations but, so far as it has been possible to determine, they do not include any instance of recurrence or complication of treatment.

Of the two recurrences encountered, one was a case of basal cell and one of squamous cell skin cancer. No binding conclusion can be drawn from this small number, but it at least indicates that our cure rate for the two types of lesions does not greatly differ. This fact is certainly significant when compared to other series[24] and when one takes into account the generally accepted conclusion that squamous cell skin cancer is the less amenable to radiation.

It should be understood that these results were not accomplished by selection of cases, excluding ones which presented difficult problems. During the entire treatment period there were no more than ten patients who might have been treated and were not. This small number includes a few patients with lesions recurrent after radiotherapy and in which cases the nature and amount of that treatment could not be ascertained. In these, it was decided that the risk of radionecrosis was too high. Also included were two patients who were not treated because the amount of previous irradiation to their cancers was known and was great enough that an additional cancericidal dosage seemed certain to exceed the tolerance of the surrounding tissue. To complete this small group, a few additional patients exhibited lesions on the hands. Here, also, Lamb[25] and ourselves have concluded that the possibility of radionecrosis was great enough to make other treatment advisable, even though the British treat such lesions without hesitation.[26]

It is an accepted fact that an inherent risk of radionecrosis accompanies the delivery of a cancericidal dose of radiation to the skin. For this reason various treatment schedules have been devised, particularly the protraction of the treatment period with many small exposures of X-ray over many days. This protraction is undoubtedly significant in lowering the incidence of radionecrosis following X-ray treatment. Even with these many treatments, however, Traenkle's

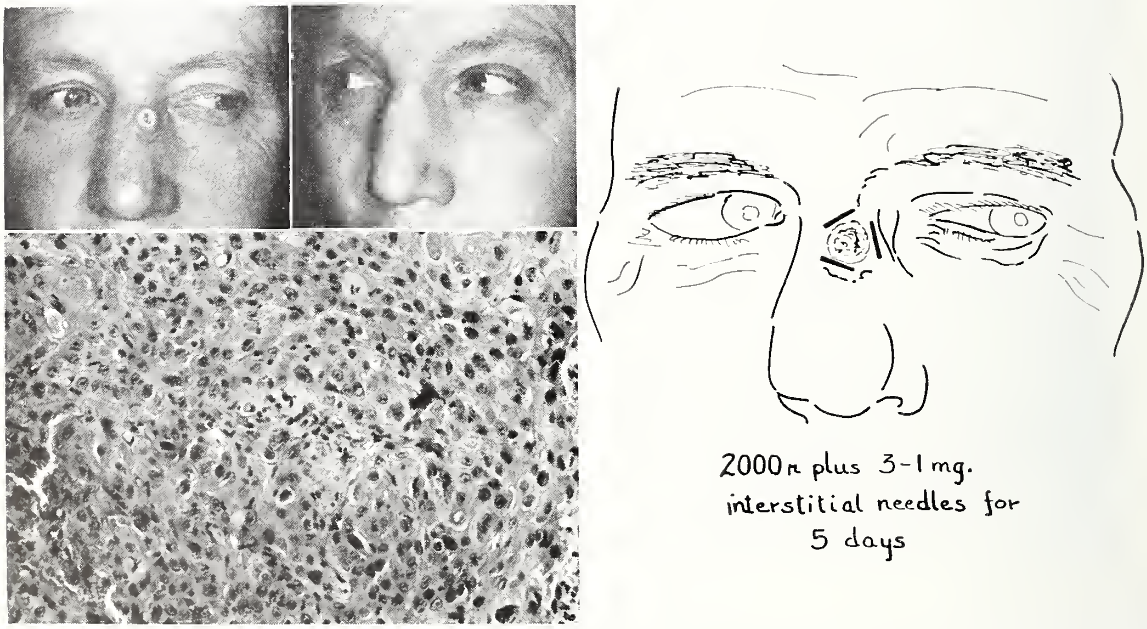

Fig. 5 Photographs of squamous cell carcinoma in Case # 7 before treatment and same area eight months after treatment. Microphotograph of biopsy tissue. Drawing shows method of applying low-intensity radium needles.

series of 935 cases of skin cancer showed a five percent incidence of radionecrosis.[27] A later article of Traenkle and Mulay[28] reported even greater protraction of X-ray exposures, for total treatment periods as long as 25 days. While this presents many problems of management, such a program did result in an enviable radionecrosis rate of only 1.22%, without a lowering of percentage of cures.

In our own series we encountered 20 cases of radionecrosis, an incidence of 3.8%. This figure includes three lesions on the hand and one on the leg. In the light of our present thinking, none of these would have today been treated with radiotherapy, a fact which would noticeably lessen our percentage of this complication. Table 4 shows the site of radionecrosis and Table 5 the time after treatment when radionecrosis occurred.

TABLE 4
SITES OF RADIONECROSES

Nose	6
Cheek	3
Temple	1
Forehead	0
Neck	1
Ear	5
Eyelid	0
Hand	3
Leg	1
Total	20

TABLE 5
TIME OF RADIONECROSIS AFTER TREATMENT

Less than 1 year	3
1-2 years	6
2-3 years	4
3-4 years	4
More than 4 years	3
Total	20

DISCUSSION

It is our belief that no single treatment for skin cancer can be optimally employed in all cases. Although the problems presented by skin cancer may not be as formidable as those posed by most malignant lesions occurring internally, these problems still defy a single method of attack. A fixed approach is doomed either to the commission of unnecessarily complicated and severe treatment or it will fall short, in a large proportion of cases, of the cure rate which might have been obtained by more flexible planning.

As examples, simple surgery beautifully solves the problem of a ten millimeter basal cell cancer on the cheek, and the result may be superior to that of radiotherapy. Conversely, it is difficult to believe that the treatment of a ten millimeter squamous cell cancer on the ear could be managed as nicely by surgery as by skillfully administered radiation. Between these two extremes occur a predominence of lesions in which the best treatment should be dictated by the site, size and type of each.

It has not, therefore, been our intention to propose one method of treatment to the exclusion of others, only to place the various methods in satisfactory perspective. As stated before, we treat only an approximate one-third of our lesions by combined X-ray and radium. This number we believe to be best treated in this manner, avoiding loss of time, hospitalization and the considerable expense necessarily resulting from involved surgical treatment.

From a clinical standpoint, a very great advantage of this combined treatment rests in its favorable biologic acceptance by normal cells. This fact enables the operator to treat a greater than usual area surrounding the visible limits of the tumor. Certainly, the restrictions imposed by the surgical need for conservation of tissue are not so stringent when combined radiation treatment is employed.

It will be noted from Table 1 that 19 eyelid lesions were treated by combined radiation. None of these patients have subsequently developed cataracts attributable to that radiation. In the tremendous experience of Lain and Lamb,[29] which extends over a period of 25 years while the techniques of combined radiation were being developed and refined, they encountered no more cataracts than might be anticipated in a group of predominantly older patients. In only one case did they feel that a cataract was directly related to their treatment. This patient was an elderly female with recurrent basal cell carcinoma almost surrounding the left orbit and in whom exenteration of that eye had been planned. The cataract was removed, the eye saved, the cancer cured.

In our group of 19 eyelid lesions it was our practice to protect the eye from X-ray by means of a platinum eye shield in the conjunctival sac. This would not protect against gamma radium rays, but the radium needles were normally at some distance from the lens of the eye and, whenever possible, the long axis of the needles was arranged radially to the lens rather than presenting the most active portion of the needle to it.

From Table 2 it will be seen that 29 of our 45 recurrent lesions followed treatment by electrodesiccation. This would seem a denunciation of such treatment. We have no way of knowing precisely how this treatment was executed in these cases, but we wish to free electrosurgery from any implication that it is inadequate, as long as a proper choice of cases is made. Electrodesiccation is entirely satisfactory for lesser lesions when a small curet is employed together with the desiccating needle and, particularly, when an antimitotic is applied to the site following the completion of treatment. A small curet enables the operator to follow along any pseudopods of tumor tissue which may not be otherwise apparent.

We realize that a cure rate as high as we have recorded will be viewed with some suspicion, for it is seldom within the province of medicine that therapeutic effort is so generously rewarded. This cure rate should not be unexpected, however, for Lamb[9] in 1953, in his chairman's address before the Section on Dermatology and Syphilology of the American Medical Association, referred to the treatment of skin cancer with such a combination of X-rays and gamma radium rays, "Today with proper dosage, we are approaching a 100% cure rate with the first treatment." That goal is now very close to realization.

Acknowledgement is made to A. Denton Vail, M.D., and to Norman Asel, M.D. for their help in preparing the photomicrographs.

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There are certain drugs which are very hazardous to the fetus. There are others which, experiments indicate, may be dangerous. Then there are those drugs which are circumstantially suspected of being hazardous. This leaves few drugs available for use. Medication cannot stop altogether while physicians wait for the future to provide the answers. As current guide lines, when the parturient needs treatment, drugs must be judged not on the impossible basis of absolute safety, but on a basis of no known added risk. With such a standard, the physician can continue to prescribe for his patients.—Editorial in *Massachusetts Physician,* 23:7 (Mar.), 1965.

ROBERT PAINE, M.D., ***St. Louis***

The Nervous System and the Heart

Part II

The second of four installments providing an extensive review of the physiologic relations of the nervous system and the heart. The first installment appeared in the August issue of MISSOURI MEDICINE, and the numbering of illustrations and references continues from that issue. The Editors believe that many physicians and medical students will wish to retain this four-part work for their permanent libraries.

Doctor Paine is Chief of the Department of Medicine at St. Luke's Hospital and Assistant Professor of Clinical Medicine at Washington University School of Medicine.

EFFECT OF SYMPATHETIC STIMULATION

WHILE THE GENERAL PHYSIOLOGIC effects of sympathetic stimulation have been known for many years, it is only recently that the wider role of norepinephrine and epinephrine on intrinsic cellular constituents has been appreciated. The mechanical effects of sympathetic activity were recognized as long ago as 1921 when Loewi observed acceleration of heart action and increased vigor of contractions after stimulating the cardiac sympathetic nerves.

Stimulation of the stellate ganglia, the ansa subclavia and the caudal cervical ganglia in dogs provoked, during 12-15 seconds of electrical stimulation, prompt decrease in left ventricular systolic and diastolic dimensions, an abrupt increase in left ventricular systolic pressure, and tachycardia (Fig. 2). Following cessation of stimulation, dimensions and pressure gradually reverted to normal. While stellate response often resulted in 60-120 mm. Hg. rise in systolic ventricular pressure, stimulation of the distal end of the severed thoracic chain elicited no detectable cardiac effects. The response of the anterior root of the ansa subclavia resembled the reaction to stellate irritation, but posterior root or caudal cervical efferent stimulation provoked minor cardiac effects.[50] Stimulation of the anterior ansal root during clamp occlusion of the ascending aorta distal to the coronary orifices induced a sharp increase in left ventricular pressure, demonstrating the lack of dependence of these changes upon peripheral arterial activity (Fig. 5). While left ventricular systolic pressure rose after sympathetic activity, diastolic ventricular tension increased only slightly if at all,[33, 16] and diastolic size decreased. Left ventricular stroke work and minute output thus increased without significant change in diastolic size or pressure. Atrial contractions have been observed to be more vigorous and atrial diastolic mean pressure to diminish as well.

Ephinephrine administration has been followed by a similar reduction in cardiac size, with an impressive shortening of systole. Despite the brief duration of systole, stroke volume has been found to change insignificantly after epinephrine because of the marked acceleration of ejection. Cardiac peak power, defined as maximum work per unit of time, has been considerably increased by epinephrine.

While an increase in myocardial blood supply might be anticipated and, indeed, required by the rapid heart action induced by sympathomimetic stimulation, the effects upon coronary flow have not been easily measured. In the isolated rabbit heart, Ahlquist[47] found 18-20% reduction in coronary blood flow after application of epinephrine or norepinephrine. Lu reported an initial diminution followed in 30 seconds by an augmentation of flow in the isolated rabbit heart.[51] With increasing concentrations of pressor amines, only an accelerated flow was observed. Marsh detected an increase in coronary flow in the cat and rabbit.[52] Wiggers, by analysis of phase flow curves from coronary sinus found also a restrictive effect after small doses of epinephrine.[53]

More recent rotametric measurements of left coronary flow have recorded acceleration of flow upon stellate ganglion stimulation even in those instances when aortic blood pressure was not increased, the reduction of peripheral coronary resistance occurring within six to eight beats.[38]

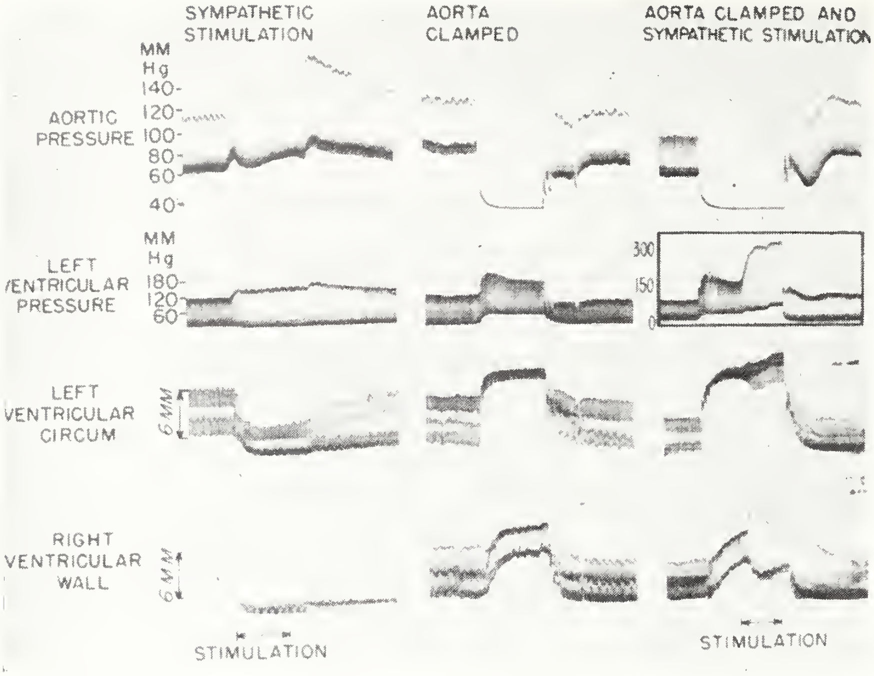


Fig. 5 Effect of sympathetic stimulation upon aortic pressure, left ventricular pressure and size, and right ventricular size before and during clamp occlusion of proximal ascending aorta.[50]

Similar effects were described after intracoronary instillations of 10 μg of norepinephrine.

	Coronary Flow	*Cardiac Output*	*Cardiac Work*
Intracoronary Norepinephrine	+36%	+22%	+25%
Sympathetic Stimulation	+30%	+32%	+32%

In similar studies with rotameters in the coronary vessel and venae cavae, the augmentation of coronary flow induced by stellate ganglion stimulation was associated with such acceleration of oxygen uptake by the myocardium as to suggest a metabolic cause of the vasodilatation.[54] Recently, electromagnetic flow determinations in large dogs have demonstrated increased left coronary flow per beat and, again, supernormal A-V oxygen difference under similar circumstances.[55] In chronic experiments upon unanesthetized greyhounds with electromagnetic flow meters on left coronary and the aorta, stellate ganglion stimulation often provoked a brief diminution of cardiac output, systemic blood pressure and coronary flow, followed promptly by augmentation of aortic pressure and flow and coronary flow.[56] The effects upon myocardial flow were detectable both in systole and in diastole. The significance of systolic myocardial flow assumes increasing importance in the presence of tachycardia with its attendant loss of diastolic time for myocardial perfusion.

The mechanism of the coronary vasodilatation from sympathetic stimulation remains obscure although the abrupt effects upon myocardial oxygen uptake add credance to the concept of a *metabolically* induced process. The unique nature of vasodilator response of the myocardial blood supply to sympathetic action has been emphasized by the demonstration of oppositely occurring curtailed blood flow in the viscera from splanchnic stimulation. The skeletal muscle vasodilator system will be discussed below.

The accelerating effects of sympathomimetic activity would be expected to include the conducting apparatus, for the entire mechanism of heart beat becomes accelerated to render the organ capable of moving increasing circulation loads. Experiments on the conduction system itself have become of prime interest. In dogs with microelectrodes placed upon the right papillary muscle, the bundle of His and the epicardial surface of both ventricles, the conduction of beats electrically initiated in the right atrium has been observed.[57] In these preparations, recordings from the electrode in contact with His bundle included atrial, His bundle and intraventricular septal action potentials; the papillary electrode recorded Purkinje and papillary potentials; while surface electrodes transcribed myocardial electrical activity. In all animals, sympathetic stimulation shortened the atrio-His interval, while His-Purkinje and intra-myocardial conduction time was minimally affected.

	Decrease in Milliseconds	Decrease in Per Cent
Atrio-His	31	49%
His-Purkinje	.7	2%
Intra-myocardial	2	5%

In similar preparations, rate of transmission to progressively distant electrodes from a surface stimulating point revealed an 8% increase in speed of conduction upon stellate ganglion activation.[57] The sequence of conduction to epicardial points of recording was not affected consistently by such autonomic activity.

The ultimate key to myocardial performance and control lies within the muscle cells themselves. In recent years, the introduction of microelectrodes into known single cells has been more widely used for the study of membrane and action potentials which reflect cellular responses to various conditions.

Unicellular recordings from the frog sinus venosus reveal accelerated systolic depolarization and accentuation of overshoot and increased resting potential. The immediate mechanism of sinus tachycardia after sympathetic activation becomes evident with the demonstration of increased rate of diastolic depolarization of the pacemaker cells and the consequent hastening of arrival at threshold.[42, 43]

Although minor increases and decreases of action potential duration have been noted, nonpacemaker cells of the atria exhibit minimal changes under this stimulation. In the atrio ventricular node, however, epinephrine produces considerable increase in the resting potential, amplitude and rate of rise of the action potential. These alterations would correlate well with the effects upon atrio ventricular conduction previously described.

Within the ventricles, unlike the results of vagal stimulation, epinephrine has potent effects upon the electrical phenomena. Purkinje fibers, potential pacemakers because of their spontaneous diastolic depolarization show accentuation of this property and also exhibit an increased threshold potential,[58, 59] facilitating the development of pacemaker activity. Myocardial ventricular fibers reveal no spontaneous or epinephrine-induced diastolic depolarization but the action potential is foreshortened and the slope of the terminal phase is more nearly vertical.[46] The clinical significance is discussed below.

While the electrical phenomena following sympathetic stimulation are of considerable interest, important cellular chemical consequences have been recognized for many years. For example, when Loewi observed the vigorous rapid beating of the frog heart during sympathetic excitation, he noted as well that blood from this heart had similar effects when perfused into a second heart quite separate from the first.[60] Cannon and Rosenbluth likewise found that cardiac nerve stimulation in the cocainized cat produced contraction of the nictitating membrane.[61] Later Dibenamine, a sympathetic blocking agent, was shown to block this response.[62] While Von Euler had demonstrated the presence of norepinephrine in the myocardium,[63] Outschoon and Vogt[64] found the catecholamine content of coronary venous blood was augmented by sympathetic stimulation.

Phosphorylase,[65, 66] the euglobulin enzyme which catalyses glycogen and inorganic phosphate to form glucose 1-phosphate, has been found in the heart muscle in two forms, as in skeletal muscle: phosphorylase "A," presenting 60-70% of its full activity in the absence of adenosine 5-phosphate; and ph. "B," requiring its presence. Epinephrine has been found to augment ventricular phosphorylase activity. In fatigued myocardial preparations, when phosphorylase "A" content is partially depleted, epinephrine restores both the activity of the enzyme and the vigor of myocardial contraction. Although in other experimental procedures myocardial depression is not accompanied by phosphorylase insufficiency, the correlation between myocardial performance, phosphorylase content and epinephrine (or norepinephrine) response under these circumstances is impressive. Depletion of myocardial catecholamine in myocardial disease has as yet not been demonstrated.

Influence of epinephrine upon myocardial ionic phenomena has been revealed by determination of coronary venous and arterial potassium concentration following the instillation of epinephrine. Initial potassium loss from the myocardium has been described with a subsequent myocardial retention of this ion.[67] Tachycardia and increased myocardial work *per se* have failed to elicit a similar ionic flux, implicating another as yet unrevealed mechanism of action of epinephrine. The significance of this potassium flux will be discussed.

SENSING APPARATUS OF THE HEART AND CERTAIN BLOOD VESSELS

In 1866, Ludwig and de Cyon[68] stimulated the central end of the interrupted aortic nerve and observed a profound hypotensive response. In 1923 Hering identified the carotid sinus nerve.[69] Since these beginnings the intricacies of a complex system of cardiac and vascular baroreceptors have been elucidated. It was soon revealed that the receptors of the carotid sinus are activated by pressure,[70-73] with response first appearing when intracarotid tension approaches 60 mm. Hg., the degree of response growing progressively with higher pressure until maximum reaction occurs at 200 mm. Hg.[74] While distension of the carotid sinus precipitates bradycardia, hypotension and apnea, this classic reaction can be obliterated not only by section of the filament of the IX nerve (nerve of Hering) which is afferent to both the carotid sinus and the carotid body, but also by encasement of the carotid sinus within a firm support so as to preclude any distension of the sinus while its nerve supply remains intact.[75, 76] Distension, not intraluminal pressure *per se*, therefore, appears to be the stimulus to carotid sinus receptors. Similarly it has been observed that a pulsatile pressure is a more potent stimulus than is a constant pressure of equal magnitude.[77, 78] The responsiveness of these receptors has been demonstrably magnified by the direct application of epinephrine to the carotid sinus and by stimulation of the sympathetic nerve to the carotid sinus.[79, 80] Direct recordings of action potentials of the carotid afferent nerve have clearly shown a burst of activity with each systole.[81-83] With increase in pressure, the frequency of action potentials in each fiber and the number of responding fibers increases. If, however, high pressure persists, the barrage of afferent impulses gradually diminishes.

Distension of the carotid sinus in a totally perfused animal is followed by pooling of blood within the animal.[84]

Section of the carotid sinus nerve precipitates acceleration of cardiac sympathetic nerve discharge and liberation of adrenal catecholamines.[85, 86]

Aortic arch receptor activity was first disclosed by the production of systemic hypotension and bradycardia after electrical excitation of the proximal end of the aortic nerve,[87] a branch of the vagus shown histologically and physiologically to have no cardiac connections.[88-90] Hypertension or distention of the isolated aortic arch has elicited bradycardia.[91] Although it has not been possible by such experiments to exclude a possible cardiac origin of the observed depressor reflexes,[92] recording of electrical activity of the aortic nerve has shown increased frequency of impulses with elevation of aortic blood pressure.[81, 93]

Distension of the lower thoracic aorta has been seen to provoke skeletal muscle vasodilatation without change in heart rate. Sensory afferents of this portion of the aorta have been found to be branches of the somatic sensory nerves.

Bainbridge, in 1915, described the occurrence of tachycardia without change in blood pressure or respiration upon rapid intravenous infusion of defibrinated blood.[52] The response was eliminated by cervical vagal section. Bainbridge attributed this response to elevation of pressure within the vena cava and right atrium. In fact, since Bainbridge's suggestion, a host of vascular and cardiac receptors have been suggested of which the Jarisch-Herxheimer response is also notable. Many subsequent observers have found conflicting results after similar infusion of a variety of fluids.[94, 95] In many instances the response to caval and right heart hypertension has been initially a bradycardia while subsequently, after repeated infusions in the same animal, tachycardia resulted.[96] This result has suggested[92] that multiple reflexes may be involved, with those provocative of bradycardia being more easily fatigued than the more durable Bainbridge response.

In animals during intravenous infusion the rise in right atrial and caval pressure has appeared to cause vasoconstriction of perfused, innervated legs,[97] yet the induction of right atrial and ventricular hypertension evoked systemic hypotension and bradycardia in other experiments.[96]

Vena caval origin of these reflexes may be doubted because isolated increase in vena caval pressure has induced no detectable change; and isolated right atrial distension has produced bradycardia and hypotension, while in presence of atrial and caval bypass, increased venous return to the right ventricle has been followed by increased heart rate. It would appear that most of the pressor receptors of the right heart lie in the right atrium, with few in the ventricle. Recordings of afferent vagal action potentials reveal patterns of activity coordinated with right atrial pressure changes—some vagal fibers discharging at the time of atrial filling and others at the time of atrial systole.[68] Whatever the site of origin of these reflexes from the right heart, they are all extinguished by interruption of the vagus nerve.

In early observations, the induction of cardiac dilatation by institution of negative pressure around the heart provoked slowing of the heart beat, while in other animals, increase in left ventricular pressure in the presence of unchanged aortic pressure likewise resulted in bradycardia.[98] In perfused heart preparations, left atrial distension had no demonstrable effect upon heart rate or blood pressure.[99, 100] If the left ventricle was distended as well, severe bradycardia and hypotension resulted. These left ventricular reflexes appeared to be as potent as those of the carotid sinus.

In dogs on cardiopulmonary bypass, so arranged to measure extra and intracorporeal blood volume, elevation of left ventricular pressure was followed by significant inflow of extracorporeal blood into the animal, indicating the induction of vasodilatation by left ventricular hypertension.[101] Associated with the volume shift was a sharp reduction of peripheral resistance.[102] On the other hand, a decrease in left ventricular pressure was followed by increased peripheral resistance. The greatest reduction in peripheral resistance appeared when both systolic and diastolic ventricular pressure rose. The volume of blood entering the systemic system was so great under these circumstances as to exceed estimated arterial content and to implicate venous relaxation as well.

Similar observations after right ventricular distension produced virtually no response.

In another study[103] dogs under anesthesia were observed following insertion of a balloon in the left ventricle during circulatory bypass of the heart and lungs. Systemic hypotension and increased blood volume developed when left ventricular diastolic pressure exceeded 14 mm. Hg. Ventricular systolic pressure did not seem related to this reflex effect.

The role of the vagus nerve in these reflexes is apparent because the responses are obliterated

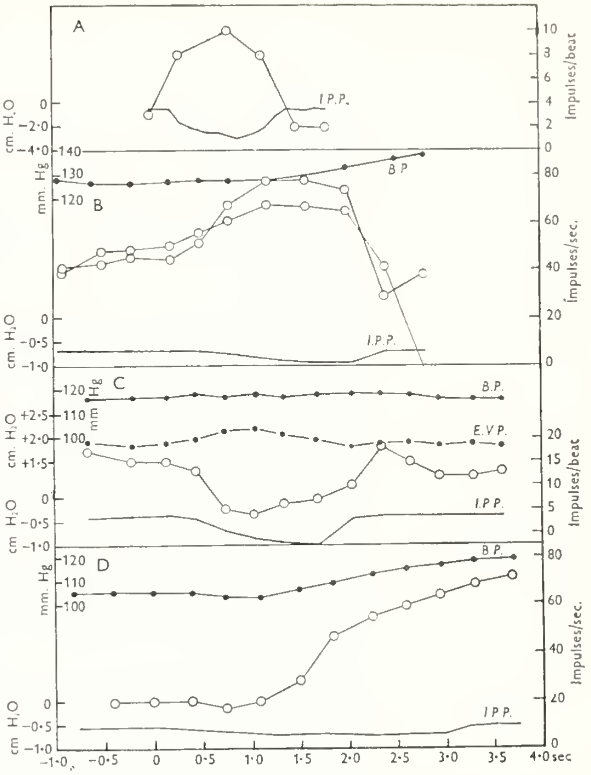
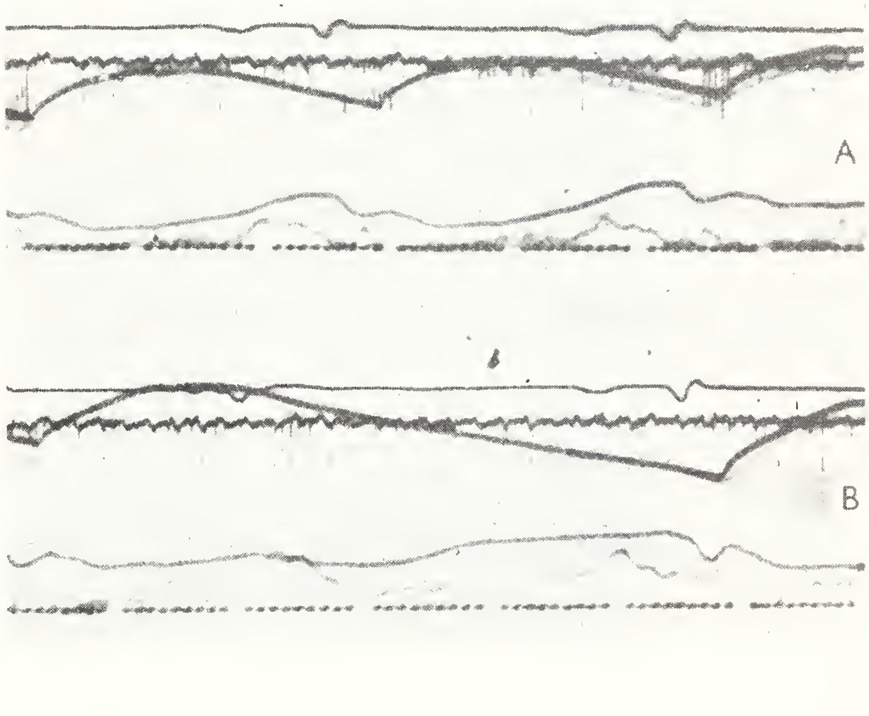


Fig. 6 Recordings of cervical vagus electrical activity during one respiratory cycle. (A) Fiber from right heart. (B) Fiber from pulmonary receptors. (C) Fibers from left heart receptors. (D) Fiber from aortic receptors.[104] I.P.P.—Intrapleural pressure. E.V.P.—Effective venous pressure.

Fig. 7 Vagal activity as recorded in left ventricular afferent fiber. Upper tracing is EKG; second tracing, aortic B. P.; third, vagal impulse. Note the impulses following the extrasystole in (B).[104]



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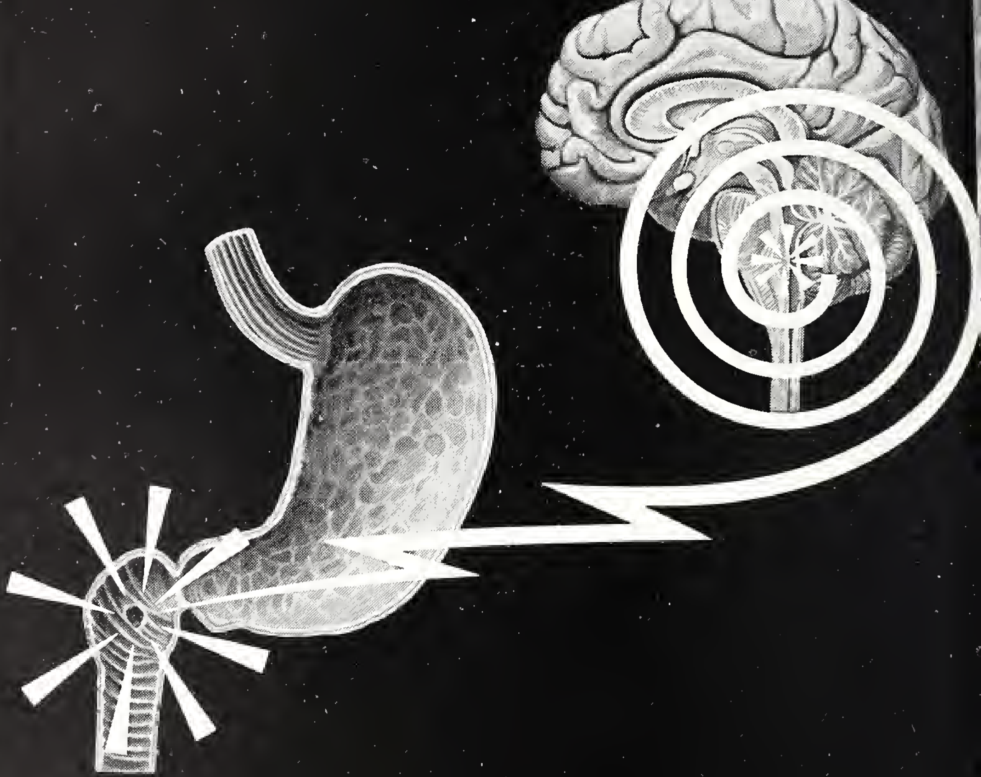

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by vagal section and because recordings of cervical vagal electrical activity show a correlation between intracardiac events and vagal behavior. Some vagal afferent fibers show bursts of impulses at the time of the venous pressure waves in the cavae and right atrium;[104] others can be identified by their activity coincident with distension or pinching of each cardiac chamber[105] (Fig. 6, 7, 8).

Encapsulated, flattened or nodal receptor nerve endings have been identified histologically in greatest numbers in the atria.[92, 106] These subendocardial structures have been found to degenerate after vagal section. In the myocardium of the atria are perimuscular arborizations morphologically similar to those of the carotid sinus. In the ventricles spindles similar to those found in skeletal muscle have been recognized.[107] Brush-like subepicardial endings with unknown central connections have been seen,[108] while in the pericoronary adventitia receptors have been identified which appear, after nerve section, to be both vagal and sympathetic.[109]

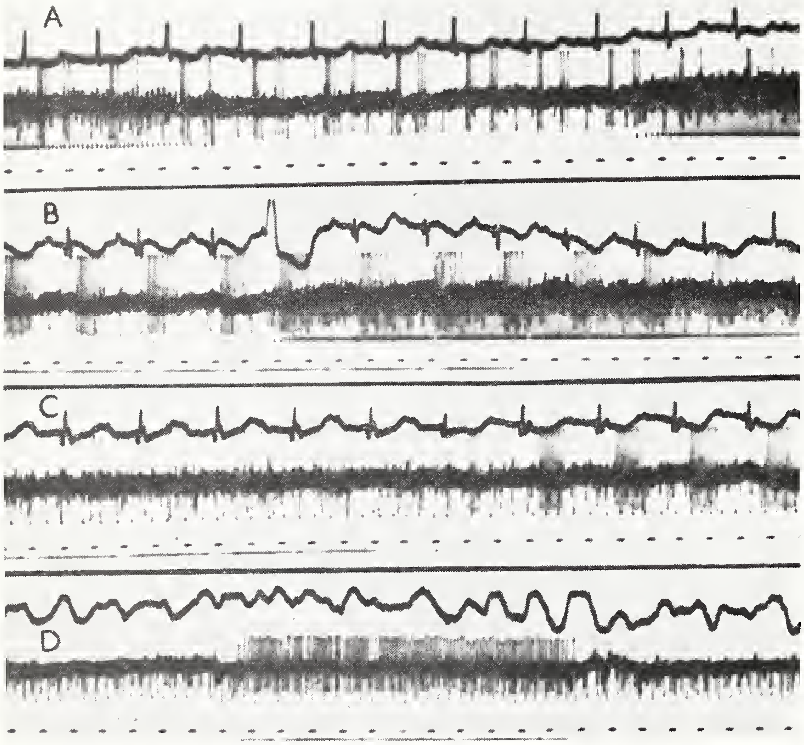

Fig. 8 Vagal recordings from right ventricular fiber. (A) Control. (B) During pulmonary obstruction. (C) During tricuspid occlusion. (D) During pinching of right ventricle after tricuspid occlusion. In each instance, upward deflection of lower tracing indicates vagal afferent impulses.[105]

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Preliminary Evalution of the Patient With High Blood Pressure

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A reminder of three types of high blood pressure which cannot, and often should not, be treated with anti-hypertensive drugs. The authors outline these types and offer procedures for examination and observation by which such types can be clinically recognized without extensive laboratory and X-ray evaluation. The simple procedures can be of benefit to both the patient and the physician. Doctors Janney, Thurmann, Utley and Aykent are from the Department of Medicine, St. Louis University School of Medicine. Dr. Aykent is a Research Fellow of the Missouri Heart Association.

THOUGH A GREAT DEAL HAS BEEN SAID and written regarding the differential diagnosis of elevated arterial pressure, insufficient attention has been paid to the early recognition of the several types which cannot be treated specifically and which should not be treated with anti-hypertensive drugs. From a practical standpoint it is highly desirable to recognize these groups prior to the expensive, time consuming and occasionally dangerous laboratory and X-ray evaluation necessary to establish the severity and type of most cases of hypertension. It might be thought that these cases are few in number, but our experience with 125 consecutively studied patients referred to the Hypertension Clinic at St. Louis University Hospital (Firmin Desloge Hospital) shows that 32% fall into this category.

With few exceptions these are readily recognizable by physical examination and repeated blood pressure observations. The latter should be carried out in the same manner each time and sufficiently often that they are no longer an emotionally threatening experience to the patient. He should be seen six to eight times at no longer than weekly intervals. At each visit the patient's blood pressure is taken in the sitting position and then reclining. The patient is allowed to rest in the reclining position for ten minutes and the blood pressure is taken again. A final determination is then made with the patient standing. These examinations may be carried out by a well trained nurse as well as, or perhaps better than by the physician. Considerable variability among the four blood pressures or from week to week is not unusual.

The largest group of patients with high blood pressure which should not be treated with anti-hypertensive drugs is that with arteriosclerotic hypertension. This constituted 16.8% of the referred patients. These are usually elderly people who are clinically recognizable by a considerably elevated systolic pressure and a normal diastolic pressure (95 or below). It is thought that these findings are due to arteriosclerotic changes in the large elastic arteries which interfere with their normal expansion during systole. Therefore, they are unable to release the kinetic energy normally stored by systolic expansion to help maintain diastolic pressure. Thickened and tortuous carotid, brachial and/or radial arteries are usually present. Often, if chest or abdominal X-rays are available, calcification of the aorta can be observed. Impaired pulsation and calcification of the major arteries of the lower extremities are common. Many of these people have symptoms or signs of impaired cerebral or coronary circulation.

Usually, treatment with thiazides and/or reserpine is ineffective in lowering the systolic pressure, and treatment with stronger anti-hypertensive drugs is dangerous since postural hypotension may be produced rather readily. With hypotension the danger of cerebral and/or myocardial infarction is real and we have seen such cases.

The second group of patients with elevated blood pressure which should not be treated is nearly as large as the first (15.2% of those referred) and somewhat more difficult to recognize. These are the vascular hyper-reactors. These people respond to emotional stress with vasopressor reactions which are sufficiently marked to raise causal blood pressure as high as 220/120 in some instances. They often give a history of having been delayed in their admission to the armed forces or application for life insurance by temporarily elevated blood pressure levels. During physical examination many of these individuals appear outwardly calm but may evidence unusual perspiration and/or moderate tachycardia. They rarely have cardiomegaly, unless for some reason other than increased blood pressure; and they usually manifest arteriosclerosis commensurate with their age. Vascular hyper-reactors are found in all age groups.

These individuals will show a drop of blood pressure to normal (140/90) during the repeated blood pressure observations described above, thus eliminating the diagnosis of essential hypertension. They do not require treatment since their blood pressures are normal under ordinary circumstances, and as a rule they do not develop the progressive problems of the essential hypertensive. Since occasionally the vascular hyper-reactor may become a fixed hypertensive he should be re-evaluated at annual intervals.

Attention is directed to the fact that many physicians are being confused by this type of case. They find the patient's initial blood pressure considerably elevated and immediately the patient is directed to have extensive tests. As soon as these are completed the patient is placed on anti-hypertensive medications and the doctor observes the blood pressure return to normal while the patient is seen weekly for several visits. The physician congratulates himself and credits the medication with an excellent therapeutic result. The patient has been subjected to slight danger and to considerable expense, committed to a lifetime of therapy and stigmatized with the diagnosis of essential hypertension. In fact, the same fall of blood pressure might well occur without any medication if the patient were a vascular hyper-reactor. This pitfall can be avoided easily by observing the patient as outlined above for a period of several weeks without treatment. In our experience there are very few patients with high blood pressure who would be harmed by taking the time to carry out the above procedure. Readily recognized complications make such exceptions obvious. It is only after the blood pressure is found to be consistently elevated that the usual extensive hypertensive evaluation is carried out.

There is a third small group of patients with elevated blood pressure which should not be treated and need not be evaluated for hypertensive disease. These are cases with complete heart block. The bradycardia makes the diagnosis obvious. The systolic pressure is high because of the large stroke volume and the diastolic pressure is normal or low because of the long run-off period. The use of anti-hypertensive drugs is contraindicated since they do not alter the basic difficulty and indeed may aggravate it by inducing vasodilatation and postural hypotension.

SUMMARY

One case in three referred to the Hypertension Clinic of the St. Louis University Hospital was found to be of a type which could not be treated specifically and should not be treated with anti-hypertensive drugs. These cases are clinically recognizable by physical examination and repeated blood pressure observations without extensive laboratory and X-ray evaluation.

The most numerous of these are patients with arteriosclerotic hypertension who are readily recognized by the combination of high systolic and normal diastolic pressures. The danger of hypotension and local cerebral or myocardial ischemia contraindicate the use of anti-hypertensive drugs.

Nearly as frequent are vascular hyper-reactors who mimic essential hypertensives but can be separated from them by repeated observations of the blood pressure. Anti-hypertensive drugs are not necessary since their blood pressure is normal under ordinary circumstances. The third group, small but easily recognizable by the marked bradycardia, is made up of patients who have complete heart block. Anti-hypertensive therapy is contraindicated.

By simple clinical evaluation, the above types of hypertensive patients can be spared (1) the expense and slight danger of extensive laboratory and X-ray investigation which other varieties of hypertension require, (2) the taking of unnecessary or dangerous anti-hypertensive medications and (3) the stigma of the diagnosis of essential hypertension.

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Epidemiology of Gunshot Injuries in Missouri

A Preliminary Study

Hunting constitutes one of Missouri's most popular sports. Figures on hunting pressure obtained by the Missouri Conservation Commission[1] indicate that in 1963, more than one third of a million persons spent some 28.8 million hours so engaged. In addition, almost every farm in Missouri contains at least one firearm of some description. In the cities, hand guns are carried by police, businessmen and others. With this abundance of firearms it would be unusual if accidents did not occur. The glee with which each case is reported in the public press tends to exaggerate the severity of the problem. The yearly average for firearm fatalities between 1952-1961 was 73.2 persons.[2]

As a preliminary step in assessing the extent of the problem, all of the cases admitted to the University of Missouri Medical Center with a primary or secondary diagnosis of gunshot injuries were compiled. It is obvious that this selection is neither complete nor representative. The Medical Center is primarily a referral hospital with relatively few direct emergency cases, and the simpler injuries are usually handled in local community hospitals. The very minor injuries requiring only office or outpatient care are lost, though some are obtained by later hospital admission for other illnesses. It is apparent that the selection in this study is skewed in the direction of more serious injuries requiring specialized care. On the other hand, injuries which are so severe that the patient is immediately killed or dies before or during transportation to the Medical Center are also lost. Therefore, this study consists primarily of the relatively severe injuries requiring active treatment, representing the core of cases about which the physician is apt to be most concerned. The immediately fatal cases are beyond his help and the minor ones represent little challenge.

Materials and Methods

A search of the files of the Medical Center from its opening in 1955 to date was carried out, and all records were obtained which listed a gunshot wound as either a primary or secondary diagnosis. This provided the majority of cases studied. The emergency room and the clinical services which frequently see cases as outpatients, such as the Ophthalmology Service, were alerted, and the patients interviewed when possible. The Medical Center does not code its outpatient diagnoses, so it was not possible to retrieve older cases by usual data processing methods. However, some cases were found by memory of the clinicians or picked up on return visits. The co-operation of the radiologists was enlisted, and films demonstrating foreign bodies resembling shotgun pellets or bullets were compared against the list of known cases. If the individual was unknown to the study, the chart was reviewed or the patient was invited for interview if possible. In this manner, some long-term cases were obtained, as well as many "false positives." The latter consisted of persons who had eaten a meal of wild game prior to having an abdominal film made and who had ingested and retained one or more shotgun pellets in the digestive tract.

In interviewing the patient or reviewing the chart, considerable reliance, warranted or not, had to be placed on the patient's or relative's description of the circumstances surrounding the accident and the size of gun and shot involved. This varied from extremely accurate information to the case of one lady who was sure only that she had been shot by a "big pistol." When possible, details were checked in interviews with the accompanying police officer or ambulance driver who frequently had considerable information concerning the incident. Much valuable information was frequently obtained from the referring physician.

The Agent

Only bona fide firearm injuries were included in this study. Injuries from blasting accidents, "blank" pistols, compressed air or CO_2 pellet guns and archery wounds were excluded. It is of interest that no records of wounds produced by rifles larger than .22 caliber were found in spite of the fact that in 1964, 120,000 deer hunters spent an average of 3.5 days in the field for a total of 420,000 hunting days.[1] Certainly, accidents did occur but they were relatively few in number and, owing to the large muzzle energies involved, many led to immediate fatalities.[3]

The most common single caliber involved was, as might be expected, the .22. Of a total of 46 injuries involving this caliber, 15 were fired from a pistol, 28 from a rifle and three from an unknown type of gun. There was one other injury from a smooth bore .22 caliber gun firing shells loaded with number 12 shot, but as this presents the characteristics of a shotgun injury it is included in that section.

There was a total of 19 injuries from the larger caliber pistols. Of these four were from .32 caliber, ten from .38, one from .45 and four from unknown caliber but larger than .22.

Shotgun injuries constituted the largest group, with a total of 50 injuries. As might be expected from the popularity of the 12 gauge, the greatest number (34), were inflicted by this gauge. The 16 gauge accounted for only three, the 20 gauge, three, the .410 gauge, four, and the .22 caliber, one. No injuries were seen from either 10 gauge or 28 gauge guns. This is felt to be due to the relative lack of popularity of these two gauges. Five injuries were inflicted by shotguns of unknown gauge.

Information concerning shot sizes was more difficult to obtain and in 50% of the cases, no accurate knowledge of the size was obtainable. In the remaining 25 cases there was one injury each, caused by ♯2, ♯5, ♯7½ and ♯12 shot. Number 4 caused eight injuries, ♯6 produced ten and ♯8 produced three injuries. One injury was sustained by a flying steel fragment from an exploded gun barrel. No cases of injury by any size buck shot or rifled shotgun slugs were obtained.

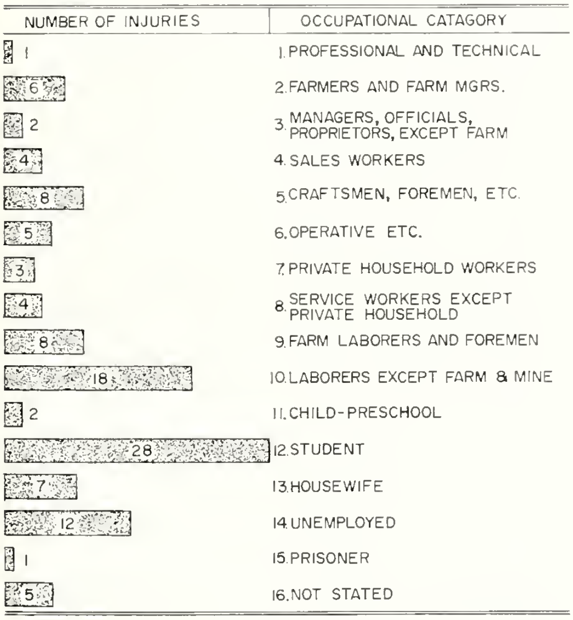

Fig. 1

A review of gunshot injury cases collected at the University of Missouri Medical Center since 1955. 116 injuries in 115 persons are examined, and it is found that 66 wounds were the result of accidental shootings. Most of these involved young adults. The authors conclude that most gun accidents can be eliminated through proper supervision and training. Their review also indicates that hunting is a relatively safe form of recreation. The EDITORS realize that this paper was not intended as a landmark in medical literature, but it is presented as an interesting, timely (and occasionally humorous) examination of what could be a very dull subject. The authors are from the Section of Neurosurgery, University of Missouri Medical Center. Doctor Black is Professor of Surgery; Doctor Sights is Associate Professor of Surgery; Doctor Kam is Resident in the Section of Neurosurgery.

THE VICTIM

A total of 116 injuries in 115 individuals was seen during the course of the study. One individual sustained two separate and distinct gunshot wounds during this period of time. His first injury was a .22 pistol injury to the abdomen and the second, three years later, was a .32 pistol injury to the hip. Between these two gunshot injuries he also sustained a knife wound in the abdomen suggesting that this person would be well advised to re-evaluate his circle of friends.

As is seen in Fig. 1, all of the occupational categories are represented. There appears to be a higher incidence in the lower socioeconomic groups, with a larger number of injuries occurring in laborers and the unemployed. The large numbers of injuries to students reflect the higher incidence during the school ages, as shown in

Fig. 2, and is felt to be age-related rather than occupational.

The frequency for males is much higher than females with males accounting for 100 out of 115 of the persons seen. This is to be expected, since women are not as oriented toward guns as are men and their exposure to situations where guns are in use is considerably less. The frequency of injuries in non-white males compared to that in white males is approximately that which one would expect on the basis of population ratios. In non-white females, however, there is a striking increase compared to white females with nine out of 15 being non-white. All of the non-white females seen were Negroes, suggesting that the Negro woman is involved about ten times more frequently than her white counterpart. The majority of these injuries were the result of misunderstandings during the course of "affairs of the heart." This is borne out by the grouping of these injuries in the age brackets during which romantic activity is highest, as is seen in Fig. 2.

In examining Fig. 2, it is seen that a distinct pattern is present. Considering first the accidental injuries, it is obvious that the risk of injury is far greater for both self-inflicted wounds and those inflicted by other persons in the two decades between ages 10 and 29. It is during this period of life that one begins to come into contact with guns and learn to handle them. As will be seen, the great majority of these accidents are easily preventable by a few simple rules of conduct, suggesting a need for more widespread and adequate instruction in the use of guns in these age brackets.

In *accidental injuries inflicted by another person*, an attempt was made to obtain information concerning the individual who fired the shot. The largest group was composed of friends or hunting companions and accounted for 18 injuries. The major portion of the remainder was accounted for by family members who frequently were also hunting companions. Three wounds were inflicted by persons unknown to the victim.

By comparison, intentional, *self-inflicted wounds representing suicide attempts* show no predilection for the younger age groups and appear to be reasonably evenly distributed throughout the adult age span. *Intentional injuries inflicted by another person* include individuals shot by police during the course of a felony and persons shot in an argument, frequently within the family but also commonly over the results of a game of chance. The peak of this distribution is in the 30 to 39 age bracket and falls off symmetrically toward the older and younger ages. This group includes seven of the nine non-white females, an extremely high proportion, and includes eight of the 17 non-white males. Of the 34 injuries in this group, 14 were inflicted by pistols of .32 caliber or larger. Once again, individuals characterized as a "friend" accounted for the largest number, 11 injuries, with four persons being further identified as a "boy friend." Family members accounted for seven injuries, including one man who returned home inebriated and was simultaneously shot in the chest by his wife and struck in the head by his son wielding a baseball bat. This man's chest wound turned out to be the least of his not inconsiderable difficulties.

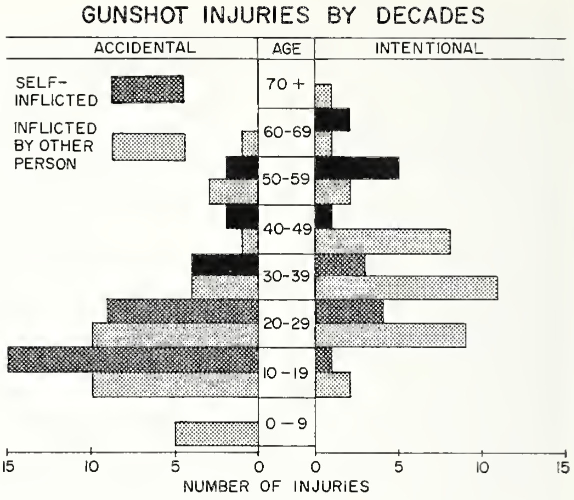

Fig. 2

The police produced five injuries in this group, and there were four injuries caused by property owners attempting to prevent robbery. One man was shot by his employer, one by a man he stopped to help on the highway and the remainder were unknown.

Many injuries involved more than one portion of the body. In these cases the category selected for analysis of the site of injury was determined by the part of the body receiving the most serious injury. Thus a person struck in the arm and head was considered a head injury rather than an injury of the extremities. The results demonstrate 41 injuries primarily to the extremities. The head and face were involved in 36 injuries with an additional seven injuries to the spine. The body, exclusive of the spine, was involved in 32 injuries.

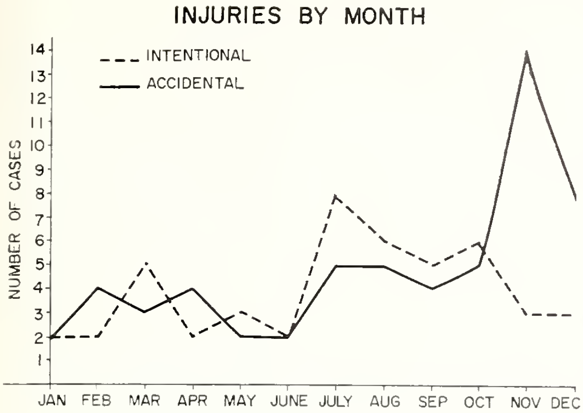

Fig. 3

ENVIRONMENTAL FACTORS

Fig. 3 demonstrates a rather marked increase in accidental injuries in the fall, especially November, which would be expected owing to the opening of many hunting seasons. On the other hand, intentional injuries appear to maintain a high plateau during the summer months, though it is not immediately apparent why this should be so. There appears to be no increase in *self-inflicted intentional* injury during any particular day of the week, but there is a sharp peak in *intentional injuries caused by others* over the week-end with 50% of the total occurring on Saturday and Sunday and 67.6% on Friday, Saturday and Sunday. On the other hand, accidental injuries show only a slight peak over the week-end when one might expect a sharp increase owing to the increased hunting pressure. Though accidents certainly occur in the field. as seen in Table I, it would appear that the ancillary procedures of gun cleaning, storage and demonstration to friends is a very important aspect in the production of accidental injuries. This is further borne out by the hours of the day when accidental injuries occur. Although 41% occur between Noon and 6 p.m., only 18% occur in the morning between 6 a.m. and Noon when most persons start hunting and another 18% occur in the evening between 6 p.m. and Midnight when little or no hunting is done.

On the other hand, 56.5% of suicides occur in the morning between 6 a.m. and Noon, the remainder being distributed evenly around the clock. As might be expected, over 72% of the intentional injuries occur during the hours of darkness, equally distributed before and after Midnight. These are the common hours for robberies, crap games and the "Frankie and Johnnie Syndrome."

Table I gives the locations in which the injuries occurred. A surprisingly large number occurred while target shooting, but it is to be emphasized that these all occurred during unsupervised shooting or "plinking." Two of the three self-inflicted injuries in this category were the result of the "Quick Draw Syndrome"[4] wherein the emphasis is placed on rapidity of draw rather than accuracy. If the gun is triggered prematurely the person shoots himself in the regions of the knee.

The accidents which occurred in the fields and woods are primarily related to hunting. The incidents listed under "Home" represent those which occur within the home or farm house itself, excluding any accident outside the confines of the walls. The remainder of the categories in Table I are self-explanatory except those labeled "Vehicle." All save one occurred in automobiles, the accidental injuries being directly related to the transportation of guns in the car. The single exception was a suicide attempt in a railroad freight car.

ANALYSIS OF CAUSATIVE FACTORS

Table II lists the causes of accidental injuries in categories of activities in which the persons were engaged at the time of injury. Although

TABLE I

LOCATION OF INCIDENT

Category	*Target Range*	*Field and Woods*	*Home*	*Streets*	*Vehicle*	*Tavern*	*Prison*	*Sheriff's Office*	*Unknown*
Intentional—Suicide			10	1	3			1	1
Felony			13	4	1	9	1		6
Accidental—Self Inflicted	3	14	9		5				1
Accidental—Inflicted by Other Person	4	15	10		3	1			1
Total	7	29	42	5	12	10	1	1	9

TABLE II

ACCIDENTAL GUNSHOT INJURIES

Cause		Inflicted by Other Person	Inflicted by Self
1. Careless Handling		5	20
2. Loading—Unloading Gun		2	1
3. Cleaning Gun		0	1
4. Climbing Fence		1	1
5. Carrying Loaded Gun in Car		4	5
6. Target Practice		2	1
7. Quick Draw		0	2
8. Hunting Excitement		4	0
9. Ricochet		3	0
10. Children Playing with Loaded Gun		4	0
11. Playing Cowboys and Indians		3	0
12. Innocent Bystander		2	0
Undetermined	(5)		
Total	(5)	30	31

the first eight categories can rightfully be considered careless gun handling, for illustrative purposes, the cases were broken down where possible into specific activities. Under category 1, are included such things as dropping the gun, objects inadvertently striking the gun, crawling through brush or, in one instance, checking to see if the gun was loaded by pointing it at a foot and pulling the trigger. Guns with exposed hammers appear to be prone to discharging accidentally by having the hammers catch on brush or protruding objects. There was only one instance of an individual knowingly pulling the trigger, thinking the "safety" was on in a "hammerless" gun. Several guns were fired inadvertently while an attempt was being made to clear a jammed shell, for example, pushing the barrel of an automatic down by placing the hand over the muzzle. The common denominator in all of these accidents was the error of allowing the muzzle to point at someone, or of placing the gun in such a position that if it fell or was knocked over it pointed at someone. Avoidance of this type of accident is simply a matter of training, as all guns can fire unexpectedly regardless of type of safety. An exposed hammer can be caught on clothing and pulled off of half-cock, and any safety can be inadvertently shoved into the "off" position.

Categories 2, 3 and 4 require little comment; but the next largest category, that of carrying a loaded gun in the car, deserves some attention. Most of these accidents occurred by putting the gun in or pulling it out of the car by the barrel. One man was accidentally shot by his brother who was shooting at pursuing police, a situation which is somewhat different from the remainder of the cases. Another unusual accident occurred as a hunting party was driving home. Their car was struck by a train causing a gun in the back seat to discharge. Little personal injury resulted from the car-train collision, but the gun blast hit one of the hunting party in the back. It is felt that there is little justification for ever carrying a loaded gun in a car, since shooting from a vehicle or from a right-of-way is illegal. The State of Illinois is even more stringent in this regard. Illinois law requires that each rifle or shotgun must be broken down or unloaded and in a case for transportation.[5]

Target shooting is quite popular and is carried out under two sets of circumstances. Supervised or established target ranges are heavily patronized and safety rules are rigidly enforced. No accidents were obtained from this source. The type of target shooting accident represented in this study is more commonly called "plinking." Persons will not uncommonly go out to an open field or body of water and shoot at targets such as tin cans, bottles, etc. Frequently, little thought is given to the type of back stop, the range of the bullet or the possibility of a ricochet. Several injuries occurred when the gun was handed from one person to another with the safety in the "off" position. Once again the error of allowing the gun to point at another person is obvious. The two "quick draw" injuries are placed in a different category as the etiology is quite different. Here the individual is attempting to draw the pistol and shoot as rapidly as possible, with the consequences that occasionally he is slow on the draw and quick on the trigger, thus shooting himself in the leg. The bullet usually enters the lateral aspect of the thigh or calf and may injure the knee joint or peroneal nerve. This type of shooting has undergone a revival of interest as a result of the advent of "western" movies and television programs.[6] Fortunately, both of our cases involved only .22 pistols. Larger guns undoubtedly would have produced much greater injury. Once again, these were unsupervised endeavors. Clubs have formed under the auspices of the National Rifleman's Association where rigid safety rules are enforced and modified ammunition or wax bullets are used.

Under the heading of "Hunting Excitement" are included those cases in which the individual who knows the safety regulations and ordinarily follows them is involved in an accident owing to temporary excitement of the chase or "Buck

Fever." As the excitement of hunting is one of its chief assets, this problem will always be difficult. The proper identification of target would exclude the majority of these cases, such as the one in which a son thought his father's hat was a squirrel or another where a man shot his companion after hearing him gobble like a turkey. There are more "excitement" cases, such as that of the boy who swung his gun to follow a rabbit and pulled the trigger just as the muzzle pointed to his brother's stomach. This type of error is more common in younger individuals but is not restricted to them. An excellent example of this was witnessed by one of the authors. On a goose hunt, it was noted that a companion who was a professional man was carefully teaching his 14-year-old son proper shooting habits. The guns were carefully "broken" before climbing a fence and handed over one by one in the approved fashion; the shells were withdrawn and counted before putting the guns away or into a car; and the feeling was obtained that safety was uppermost in consideration. However, late in the afternoon this man shot a goose which, only crippled, attempted to escape. He ran after the bird and, catching it in a thicket, sought to pin it down by placing the gun butt on it, thus bringing the muzzle to bear on his own shoulder, chest and face. Fortunately neither the bird's foot nor wing caught in the safety or trigger so no accident occurred. In the evening after the son had retired, fellow hunters pointed out the potential danger of the man's actions. The individual involved vehemently denied that he had attempted to hold the bird with the gun. There was no questioning the honesty of his denial, but it simply points out that in excitement, persons are guilty of errors which would normally horrify them.

No ricochet injuries involving rifle or pistol bullets were seen. All of those listed were eye injuries inflicted by shotgun pellets. Most ricochet injuries are entirely superficial and do not require a physician's care, but the eye represents a special case. Two of the three injuries occurred when a member of a party fired into trees while hunting quail or rabbits, with the resulting ricochet striking another member of the party who was well out of the line of direct fire. In these circumstances, tempered glass shooting lenses are a worthwhile investment.

The incidents concerning children playing with loaded guns accounts for all the accidents to children under the age of seven. In each case children had access to a loaded gun and were unable to distinguish it from a toy. The simple expedient of keeping guns under a lock and key and the ammunition under a separate lock and key would eliminate these tragic accidents.

Although it might be assumed that playing "Cowboys and Indians" would be limited to the very young, such is not the case. Two of the three involved persons were over 15 years of age, and in one case, unusually tragic because the injury was a complete cervical spinal cord section, college students were deliberately shooting at each other to "see how close we could come." No further comment is necessary.

The two innocent bystanders were inadvertently struck by bullets fired during quarrels in taverns.

RESULTS

The patients were admitted to the hospital under the care of the particular service most appropriate to the nature of the injury. Treatment followed accepted surgical principles for penetrating wounds. As is seen in Table III, there was an overall case fatality rate of 10.4% with head

TABLE III

FATALITY AND MORBIDITY

Location	*Deaths*	*Morbidity-Days** *Initial Hospitalization*	*Survivors*	*Permanent Disability*		
	CASE FATALITY RATE		REPEAT HOSPITALIZATION %	NONE %	PARTIAL %	TOTAL %
Head	30.6% (4/36)	13.5	40 (10/25)	56 (14/25)	40 (10/25)	8 (2/25)
Spine	0	†	86 (6/7)	28.6 (2/7)	14.3 (1/7)	57.1 (4/7)
Trunk	3.1% (1/32)	18.5	22.6 (7/31)	83.6 (26/31)	16.4 (5/31)	0
Extremities	0	28.5	27.8 (11/41)	51.2 (21/41)	48.8 (20/41)	0
Overall	10.4% (12/116)	16.5				

* Days of initial hospitalization of survivors.
† See Discussion.

injuries producing the largest number of fatalities as well as the highest case fatality rate (30.6%). Of the head injuries who died, 55% (6/11) were suicides who shot themselves at point blank range. Three of the deaths were due to hunting accidents. One woman was shot at point blank range by her husband. And the other death occurred during the course of a gun battle with police.

In the estimate of permanent disability for the purpose of this study, somewhat different grounds than those utilized by the legal profession were employed. Minor disabilities such as scars, small degrees of joint stiffness, etc. were disregarded. In general, if the patient was able to return to his old job or a comparable job he was counted as having no significant disability. An individual who lost the sight of an eye, a portion of an extremity, or who sustained disfiguring facial scars was counted as a partial disability. These patients were able to return to their old job only with considerable effort and handicap. A person was deemed totally disabled only if he was rendered paraplegic, totally blind or otherwise incapacitated. Some of these individuals will spend the remainder of their lives in hospitals, others will be able to manage in wheel chairs after extensive rehabilitation, and still others may be able to manage in a protected environment. Morbidity refers only to the initial hospitalization which was necessary until the patient could return home or be transferred to a rehabilitation center. Many persons were subsequently re-hospitalized for plastic repair, nerve grafts or physical therapy. The number of persons re-hospitalized is indicated in the column under "repeat hospitalization." No attempt to calculate morbidity was made in the case of spinal injuries, since the quadriplegics were continuously hospitalized and this fact would have rendered the figures meaningless.

DISCUSSION

This preliminary study of the epidemiology of gunshot wounds points out several features of interest. There was a total of 116 cases but 13 of these actually occurred prior to 1955 leaving 103 cases injured and admitted during the 9.5 year period between July 1, 1955 to December 31, 1964, a yearly average of 10.9 cases. Of these, there were 11 fatalities or an average of 1.6 fatalities per year. In the same general period of time the entire state of Missouri had 73.2 firearm fatalities per year from all causes. Robb[1] states that according to the files of the Missouri Conservation Commission, during the same period, there was an average of only 12.3 fatalities per year from hunting accidents. During the period the Commission recorded an average of 28.9 hunting accidents per year, thus the overall hunting fatality rate is 42%. Our figures would indicate that if the victim's injury is such that he survives to reach a referral hospital the case fatality rate for accidents drops abruptly to 4.5% (3/66).

Recreational safety is becoming of increasing importance as our population finds more leisure time. It is interesting to compare the incidence of hunting fatalities to other forms of accidental death, such as auto accidents. In the state of Missouri alone it is not unusual for 12 or 13 highway deaths to occur over a single week-end. For the year 1963, 1,168 persons were killed and another 15,727 injured in motor car accidents. According to the State Highway Patrol, this represents one death for each 18-million miles traveled, or, assuming an average overall speed of 30 m.p.h., one death for each 600,000 hours of driving. Utilizing the Missouri Conservation Commission statistics, one arrives at approximately one hunting death for each 2.3-million hours of hunting. Since an average upland game hunter is in the field only an average of 100 hours each year and the deer and water fowl hunter much less, one would have to hunt approximately 23,000 years to sustain a fatality on a statistical basis!

On a nationwide basis there are approximately 1,000 recreational firearm deaths per year, which compares favorably with approximately 4,500 deaths from swimming, 1,200 deaths in boating accidents and 3,000 deaths from falls.[7] Nevertheless, much can be done to increase safety in the use of firearms. Our figures would indicate that the home remains the most dangerous place for firearm injuries and that the greatest number of injuries there are the result of avoidable errors, such as careless handling, horseplay or failure to transport or store firearms properly. The late teens to early adult life appears to be the most dangerous period, for the same reasons that this is the critical age in motor accidents, i.e., inadequate training, lack of experience and lack of judgment. Proper training in the use of guns is obtainable in most areas. There are said to be more target ranges in this country than public golf courses and all of them offer courses of instruction under supervision. The National Rifleman's Association has been active in training programs and offers multiple

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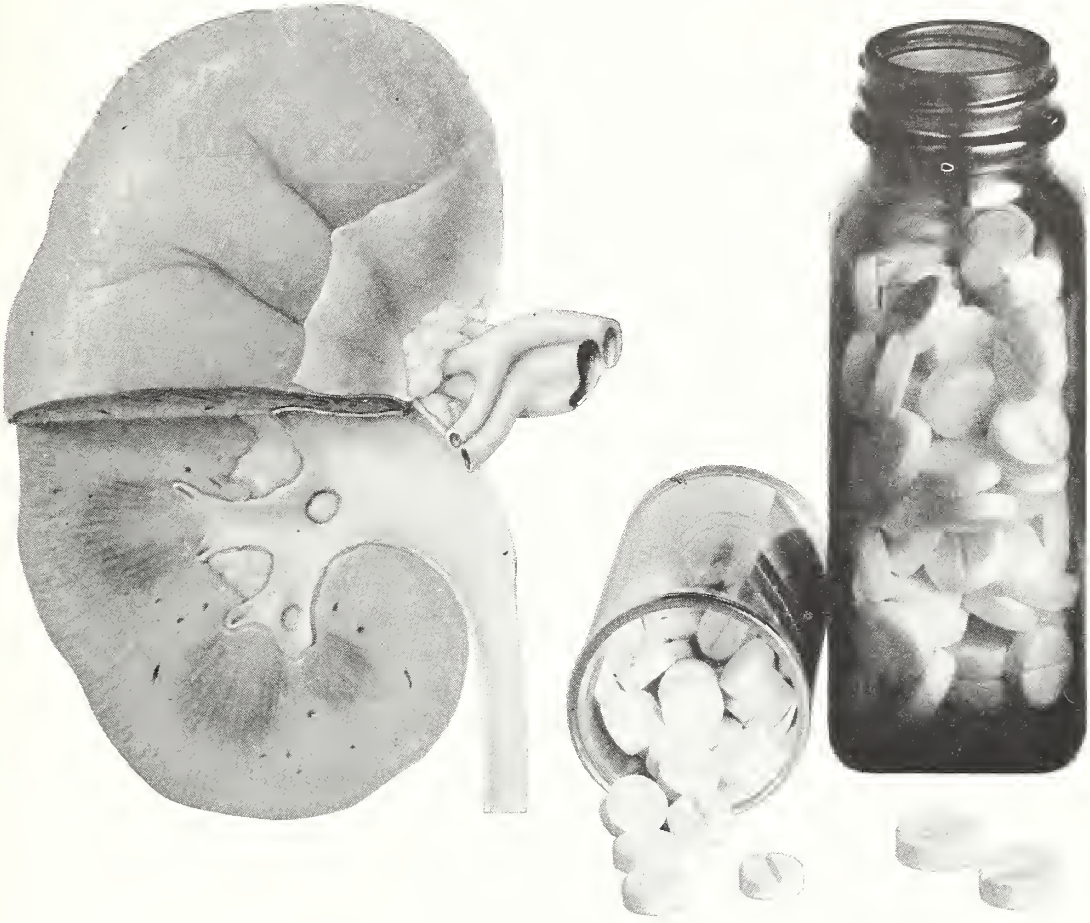

understanding... precedes development

The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

• Many problems connected with renal structure and function were still undefined or unsolved. The Renal Research Program would begin its basic research in some of these problem areas.

• From knowledge thus acquired might come clues to the development of new therapeutic agents of significant value to the physician.

For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

Along with other research teams at Merck Sharp & Dohme, the Renal Research Program continues to add new understanding of basic problems—understanding which will lead to important new therapeutic agents.

MSD MERCK SHARP & DOHME Division of Merck & Co., Inc., West Point, Pa.

where today's theory is tomorrow's therapy

training facilities.[8] Accidents are almost unheard of on skeet and trap ranges, and most communities could make arrangements for properly supervised training. In addition, most police associations are happy to provide instruction in the handling of guns. It is no more proper to buy a boy a rifle or shotgun and turn him loose than it would be to buy him an automobile and send him onto the road without training.

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In Memoriam

Limbaugh, Walter R., M.D., Hayti, a graduate of National University of Arts and Science, 1916; member of Pemiscot County Medical Society; aged 74; died June 4, 1965.

Meyers, Montague M., M.D., St. Louis, a graduate of St. Louis University, 1910; member of St. Louis Medical Society; aged 76; died June 18, 1965.

Williams, Robert A., M.D., Kansas City, a graduate of Medico-Chirurgical College, 1900; member of Jackson County Medical Society; aged 94; died June 20, 1965.

Vizgird, Joseph J., M.D., St. Louis, a graduate of St. Louis College of Physicians and Surgeons; member of St. Louis County Medical Society; aged 78; died June 29, 1965.

Sale, Llewellen, Sr., M.D., St. Louis, a graduate of Washington University, 1909; member of St. Louis Medical Society, aged 83; died July 6, 1965.

Whitehead, Frank F., M.D., Neosho, a graduate of the University of Arkansas, 1933; member of Ozarks Medical Society; aged 61; died July 11, 1965.

Teall, Raymond E., M.D., Carrollton, Illinois, a graduate of Chicago College Medical School, 1916; member of St. Louis County Medical Society; aged 84; died July 18, 1965.

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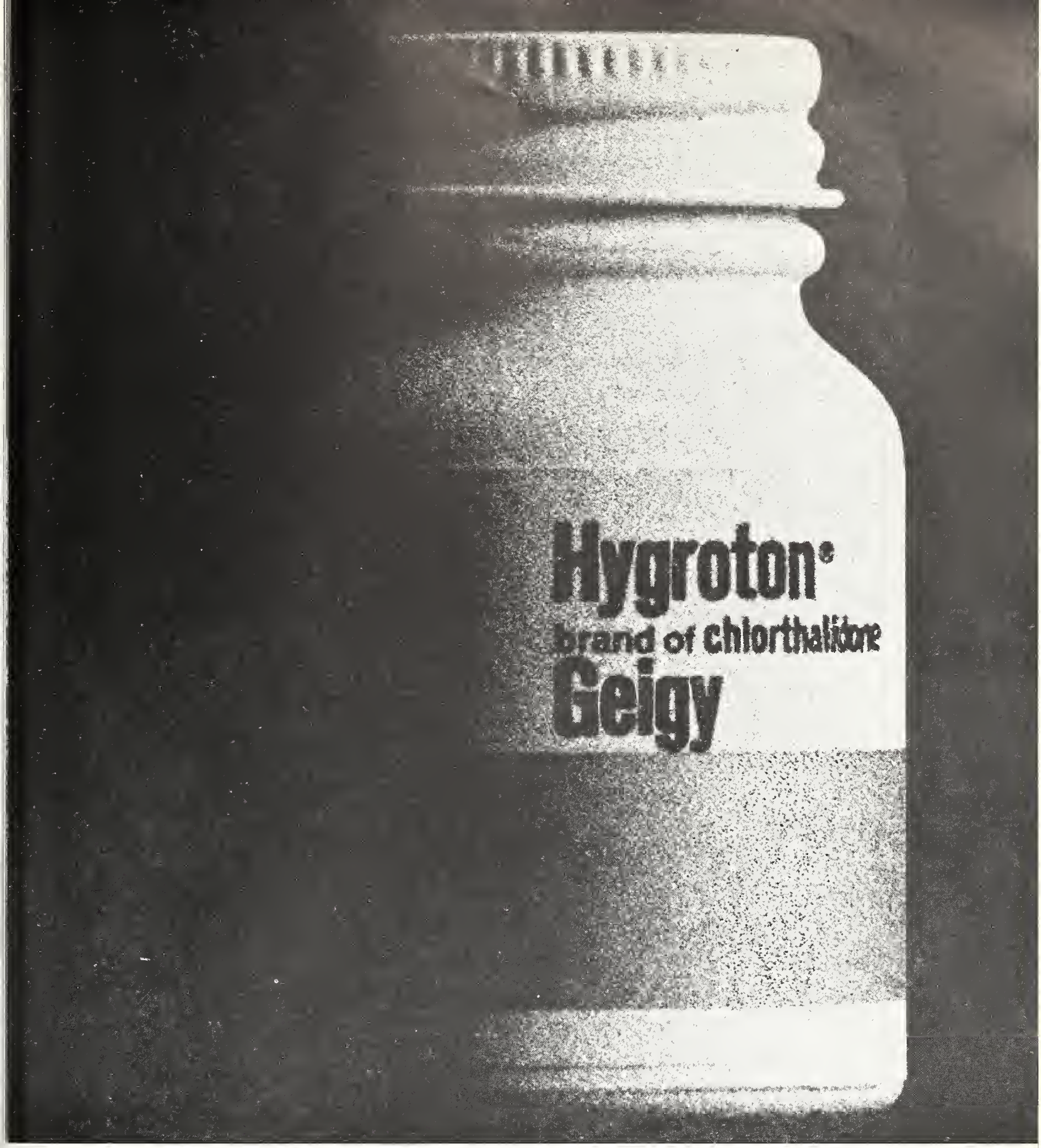

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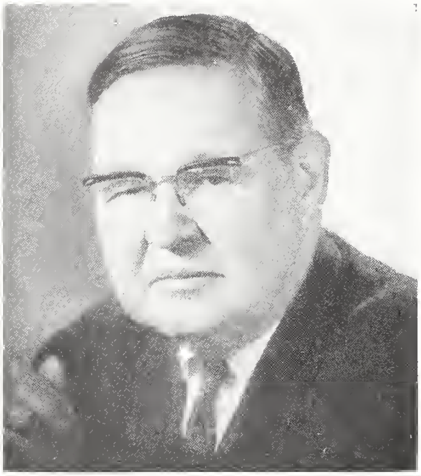

Paul R. Whitener, M.D.

President's Message

Very few man are "born leaders," and it appears that only a few of these choose medicine as a career. As a result, medicine has to develop its own leaders. Frequently, this is a matter of being at the right place at the right time.

In my own medical society, regardless of the seriousness of the problem under consideration, only 20 to 40 members out of a total membership of more than 450 are present at meetings. I understand that many other societies have even less membership interest.

How should we interpret this obvious lack of concern on the part of the large majority of doctors? Does it mean that most physicians favor compulsory Social Security, government directed medicine, etc.? Our detractors claim that this is the case, but I would like to think otherwise. I believe that most doctors are so involved in caring for the sick that, in their own minds, they are "too busy" to concern themselves with the legislative, political and economic affairs of medicine. They leave much mundane matters to a handful of colleagues at the local, state and national levels. These, then, are the "leaders" of medicine.

Now the profession is faced with the very real threat of "third party" medicine. The individual physician must decide what his own relationship to this new program will be, and I would not attempt to influence anyone's decision on this point.

For those who decide to accept the program, even reluctantly and with serious reservations, the battle has just begun. Now, the individual physician will come under pressure from bureaucrats and lay boards who want to tell him when to hospitalize, what tests to perform, when and what therapy to use, how long to continue hospitalization and many other things.

If such pressures are to be resisted, as resisted they must be for the good of our patients, it can be done *only* through unified effort. The only mechanism offering complete professional unification . . . general practitioner with surgeon, ophthalmologist with orthopedist, pediatrician with radiologist . . . is the mechanism represented by county medical societies, state medical association and the AMA.

The door is open, and your "leaders" urge you to come in. Your knowledge is needed. Your energies can be utilized. Your presence is desired.

Paul R. Whitener M.D.

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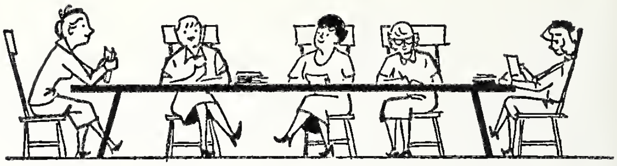
Woman's Auxiliary



Hello again! As I write this, the good old Missouri temperatures are soaring in the 95-100 degree range and my heart is full of gratitude for ice cubes and air-conditioning! I'm still remembering, glowingly, how everyone cooperated with our efforts to give Betty Sutter a fine send-off on her year as National President! From the lovely thank-you notes I have been receiving, our efforts were not in vain! Thank you all again!

Mrs. R. W. Bohnsack

The next thing on the agenda is our Annual Fall Conference to be held at the Holiday Inn at Poplar Bluff on October 20-21, with the Butler-Ripley-Wayne Auxiliary, assisted by the Auxiliaries of the Ninth and Tenth Districts, as hostesses. News from Merline McLain, President of Butler-Ripley-Wayne and General Chairman, tells me plans are progressing nicely. I am working like a beaver on the program for our HOOTENANNY FOR HEALTH, and am pleased with the cooperation afforded me so far! The enthusiasm indicates that we'll have a record-breaking crowd! I hope you have your reservations in by now. Your room reservations should have been in by August 28; your ticket reservations with check by September 28, to Mrs. B. M. McLain, Route No. 2, Highway 67S, Poplar Bluff 63901.

Our program theme this year in Missouri will be "ACCENT ON PROGRESS"—progress in any community, state, national or international health project which our Medical Societies approve. These include: increasing our membership; safety; international health activities; disaster preparedness including Medical Self-Help classes; AMA-ERF; health careers recruitment; legislation; mental health; rural health; Senior Citizens; and any community service for which there is a need. I would especially like to stress "Helping the Handicapped" this year. Our AMA Auxiliary received a citation, presented by Mr. Harold Russell, Chairman of the President's Committee for Helping the Handicapped, for its outstanding service in this field at our Convention in New York. We'll have more about this at our Fall Conference. Our Point System this year will be designed to show how much progress the county auxiliaries have made.

The National Board has approved the publication of a communication to the nearly 1,200 county auxiliaries to be called "Direct Line" and it will contain a simplified digest of National Committee programs. This will help us with educational and action programs designed to meet specific community and statewide needs.

A fine letter from the MSMA office suggests that you make a special effort to express appreciation to your state senators and representatives for the consideration and assistance which they gave the medical profession during the recent session of the General Assembly. Of the 1,230 proposals introduced in the 73rd session 108 dealt either directly or indirectly with medical and health matters. Our MSMA is to be commended, too, for its active interest in the 1965 legislative endeavor.

In closing, I would like to express again the thanks of our entire Auxiliary to the members of the MSMA for their generous support—both financial and man-power-wise—of our reception and gifts for Mrs. Sutter. Everyone was most cooperative, which is what made it so successful. Thank you all so much!

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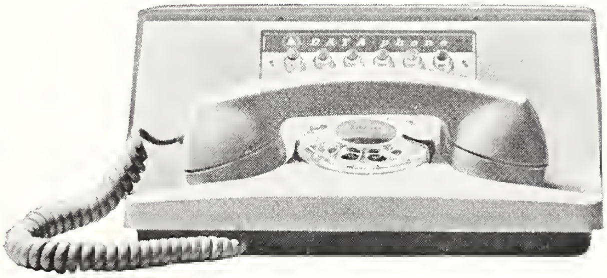

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EDITORIALS

CHOICE WITHOUT RECRIMINATION

The two following Editorials are published because they represent the two divergent philosophies which face the American physician today. The long debate over "medicare" is finished; "medicare" legislation is a *fait accompli*. It is now left to the individual doctor to decide whether or not he will "participate" in the new government program.

Proponents of both philosophies—"participation" and "non-participation"—can offer valid and logical arguments to support their causes, and yet both must admit that there is matching logic and validity on the other side. We of the medical profession are trained and accustomed to deal with absolutes, or at least in what we like to think of as absolutes. Medical treatments and surgical procedures evolve from scientific research and experimentation, and there is little leeway for debate over the resulting conclusions.

Unfortunately, in the fields of social, political and economic relations there are few absolutes. Such intangibles as human desire, fear, hope, ambition and, yes, greed all play very real parts in shaping these relations. It is in this area that the physician sometimes feels himself to be in alien territory. There are no comforting black and white absolutes, and the hard objective facts of science are often overwhelmed by the sheer weight of human emotion.

This, we believe, is the position in which medicine finds itself today. The medical profession is "on record" with facts and figures which support its longstanding opposition to "medicare." The profession has done more than it reasonably might have been expected to do in warning the nation of the potential dangers of this legislation. Now it remains for the individual physician to decide, without legal compulsion or organizational pressure, whether he will proceed along the path of "participation" or will select that of "non-participation."

Regardless of the individual choice, all physicians will continue to give the best possible medical care to their patients. Regardless of the individual choice, every physician must stand ready to give the alarm should any phase of the program show concrete evidence of corroding the high level of health care which has been developed in this country. Regardless of the individual choice, we would hope along with Doctor Terry, that no physician condemns another who has chosen the alternate path.

Medicine can ill afford further fragmentation at this time.

NON-PARTICIPATION

The AMA President has personally said that physicians should fulfill their professional services to all patients who seek their services, regardless of who or what may pay their fees. His opinion has been presented to the AMA House of Delegates. An unemotional analysis of any program for financing health care services emphasizes the conclusion that physicians would have to stop practicing to become non-participants. Patients have (1) purchased, (2) prepaid, or (3) employer-provided plans which assist them to pay for physicians' services.

Whether the fees are paid by the patient or the insurer, the amount comes from a program, and the physician will provide the insurer (through a form report or otherwise) with information authenticating his services and placing his fees in line for payment. A voluntary hospital cannot admit a patient unless there is a physician responsible. How can sick and injured people obtain hospitalization and medical services if their physician will not accept them as patients, due to an objectionable health care program in which the physician is a non-participant?

What will a non-participant physician do when beneficiary people who have been his patients ask for his services? How will the patient pay the physician's total fees if the physician is a non-participant and refuses to authenticate his services so that the patient can be reimbursed for his legally-due financial benefit?

There is no such thing as "a little bit of pregnancy." And there is no such thing as "a little bit of non-participation." Physicians have become financially independent in recent years, because some of their predecessors sponsored and developed prepayment health care services. This has changed the economics of medical practice from a long-term, extended credit payment service to almost a cash-and-carry business. Today, it has enabled the consumer to promptly seek physicians' services for all members of the family—often *more* services.

Fragmentation of the medical profession by another segment of physicians is certainly not the answer. Doctor Appel's suggestion for continued efforts to oppose objectional programs and strive to provide the best health care for the less fortunate is a sophisticated position that is worthy of doctors of medicine.

E. H. STRATEMEIER, M.D.
Editor
Greater Kansas City Medical Bulletin
July 3, 1965

THE DOCTOR'S DILEMMA

Within the last week or two probably all the nation's doctors received a communication from the Association of American Physicians and Surgeons (AAPS)—an organization of ethical, freedom-loving physicians dedicated to preserving quality medical care and medical freedom for physicians, their patients, and all Americans. AAPS represents physicians in the socio-economic and political aspects of medical practice—and the areas where the socializers operate to gain control of physicians and their patients.

For most physicians H.R. 6675 (Medicare bill) and Section 6 of the principles of medical ethics of the AMA (a physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care) create a dilemma (a problem seemingly incapable of a satisfactory solution). The AAPS literature should be required reading for all of us. Briefly, it discusses this very serious dilemma we as physicians face today and includes their plan of Non-Participation which, in my opinion, is the only certain ethical and moral way to resolve the dilemma in such a way as to prevent the inferior medical care which inevitably occurs in a socialized medical care program. There is ample evidence in this country already, as well as other countries, to prove this point.

Medicare cannot be imposed upon the American people without physicians. I personally feel that this probably is very likely the last chance that we will have to continue the private practice of medicine as we know it today. Actually, a number of State Medical Societies have *already* passed resolutions to this effect. We have current local business before our Medical Society which in a sense carries the same connotation as the medicare bill and this would be a very good place to start the application of this principle. There are those perhaps who may be reluctant to take this firm stand. No one has any right to condemn another who disagrees and I do not intend to do so. But after considerable discussion among ourselves which this proposal deserves and when carried to its logical conclusion I believe that most physicians will be convinced that this position is the correct one. I would personally rather be organized within a group of doctors (AAPS) than organized through regimentation by the Federal Government. Either way, some of our in dividualism (of which our society can boast highly) is lost but the former is more palatable and sensible to me.

There is no good reason under the sun why this plan cannot and will not prevent the imposition of socialized medicine upon the American people. We hear all the time about the "poor image" of the American doctor. This is actually hard for me to believe when I think about Dr. Ben Casey, Dr. Kildare, Rex Morgan, M.D., to mention a few—all very popular figures as far as the advertising world is concerned. This suggests to me that the "image" we have been led to believe is, more than anything else, a figment of the current liberal-socialist journalists and news commentators whose recent pastimes have included deriding the medical profession.

I think we should forget about all this poor image propaganda. Our patients like us and appreciate the medical world. Why don't we show them that they are right? I am foolish enough to think the public will understand and appreciate our efforts in their behalf—which actually will be of as much or more benefit to them as it will to the physician.

Let us all take more than just a passing glance at the current serious proposals and problems affecting private medical practice. Their ultimate solutions will point the pathway of American Medicine for years to come.

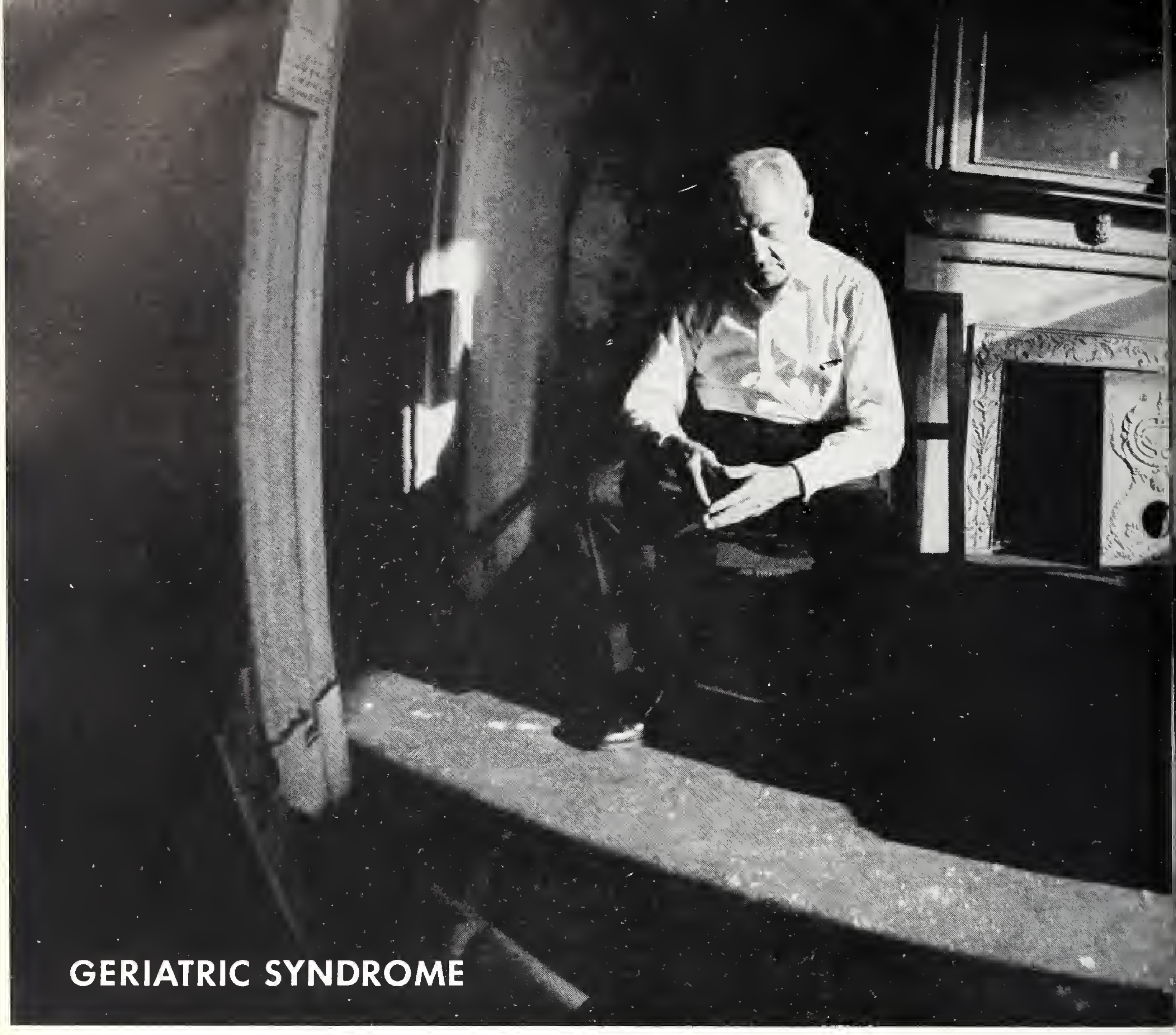
J. W. TERRY, M.D.
Editor
The Cape County Journal
June 1965

MIND YOUR P's AND Q's

State Senators and Representatives are home again, catching up with their trade, business or professional duties which were shoved aside during the six-month session of the 73rd Missouri General Assembly. During those six months, elected representatives have little time for anything except legislation and politics. (Politics: the science and art of political government.) It is difficult for a person who is not directly involved to even imagine the pressures—direct and indirect, personal and organizational, amicable and hostile—which are a part of a legislator's life.

During the Session, your State Medical Association found the great majority of law makers receptive to the opinions and suggestions of the medical profession and considerate of its spokesmen. It would now be most appropriate for the profession to express its appreciation for this sympathetic attitude.

The appreciation might take the form of a simple personal note or it might be manifest in a Legislators' Night at the next medical society meeting. Form is not important. What IS important is that we are as free with our appreciation as we were with our requests and suggestions.



when a change in environment overwhelms him with anxiety

Failing health, financial difficulties, or the death of a spouse are among the reasons why elderly people may be obliged to leave their familiar surroundings. Moving in with children or entering a home for the aged may satisfy practical requirements but can be psychologically traumatic since emotional resilience tends to diminish with age.

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arcotics such as meperidine, barbitu-
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drowsiness may occur, patients should
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gerous machinery. Parenteral Solution
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and should not, under any circum-
be injected subcutaneously or intra-
y. When the usual precautions for I.M.
have been followed, reports of soft
actions have been rare. I.V. adminis-
hould be slow, no faster than 25 mg.
ute, and should not exceed 100 mg. in
le dose. Particular care should be used
injection only into intact veins; a few
s of digital gangrene occurring distal
njection site have been attributed to
ent intraarterial injection or periarte-
avasation, both of which should be
More detailed professional informa-
ilable on request.

From the Medical Schools

ST. LOUIS UNIVERSITY

The St. Louis University School of Medicine has received two health research facilities grants totaling $1,591,900 from the Division of Research Facilities and Resources of the National Institutes of Health.

A grant of $1,369,000 was awarded to aid in construction of a five-story addition to the School of Medicine building at 1402 S. Grand Blvd. A grant of $222,900 was awarded to help with a renovation project for the department of biochemistry. The balance of the funds needed are to be provided through the current Medical Center Campaign.

The new five-story wing will provide 40,000 additional square feet of research space which will be assigned to investigators in the biomedical sciences. Construction is to begin in January with occupancy scheduled for July, 1967.

The Psychiatric Department, under provisions of an NIMH Grant, is offering post graduate courses in psychiatry for non-psychiatric physicians. For information contact Dr. Arnold Block, Director of Post Graduate Psychiatric Education at:

David P. Wohl Mental Health Institute
1221 South Grand Boulevard
Saint Louis, Missouri 63104
Telephone—PR 1-7600

Two Medical School investigators have received a new award of $138,382 from the American Medical Education and Research Foundation's Committee for Research on Tobacco and Health for the support of a three year study. The sum of $50,220 has been allotted for the first year of the study, according to Dr. Robert H. Felix, Dean.

The grant will support the joint research of Dr. G. O. Broun, Sr., Dean Emeritus and Professor of Internal Medicine, and Dr. Herbert C. Sweet, Director of the James B. Miller Pulmonary Function Laboratories and Professor of Clinical Medicine, who will study the relationship of respiratory viruses to emphysema, chronic bronchitis, and pulmonary neoplasma.

The investigators will search for a possible relationship between viruses and these conditions.

Their work will include both clinical and laboratory studies.

Dr. Robert W. Dorner, Assistant Professor of Biochemistry, is engaged in a new research study aimed at shedding some light on the cause of arthritis and other connective tissue diseases. The project is supported by a $20,630 grant recently awarded to the School by the United States Public Health Service.

One important approach in trying to gain an understanding of arthritis and other closely related illnesses is to study the chemistry of connective tissues, and to determine how the composition of these tissues can be affected by various metabolic, drug and chemical stresses.

UNIVERSITY OF MISSOURI

Dr. Lynn O. Litton has been appointed as Professor of Surgery (Orthopaedics) and Chief of the Section of Orthopaedic Surgery to replace Dr. George N. Austin who resigned to accept an appointment at the University of Maryland in Baltimore. Doctor Litton was an Associate Professor at the University of Kansas before coming to the University of Missouri Medical Center in his new position.

Dr. James M. A. Weiss, Professor and Chairman of the Department of Psychiatry, and Dr. David Davis, Associate Professor in the Department of Psychiatry, were invited participants at the first organizational meeting of the Midwest Professors of Psychiatry held in Chicago. Selected representatives from 28 midwestern medical schools attended the meeting. Problems relevant to the psychiatric education of medical students and residents were considered in small and large group discussions and panels.

WASHINGTON UNIVERSITY

Washington University School of Medicine has announced plans for a new $8.9 million medical sciences research-teaching facility. Dr. William H. Danforth, Vice Chancellor for Medical Affairs, said the announcement was the result of the awarding of a more than $4 million grant from the United States Public Health Service for partial construction costs. The new building will permit an increase in class size from the present 86 students to 109.

The new facility will include 203,604 square feet in five stories and a partial basement. There will be 20 teaching laboratory units with sit-down and stand-up facilities in each equipped for 12 students. These laboratories will be used by each department while its course is in session and will eliminate duplication of facilities. Current plans are for construction to begin June 1966 with completion set for July 1968.

Dr. Joseph Ogura has been appointed head of the Department of Otolaryngology. Doctor Ogura will succeed Dr. Theodore Walsh, who has served as head of the Department since 1940. Doctor Walsh will continue in the Department as Professor of Otolaryngology.

Dr. Ogura has done extensive research on the larynx with emphasis on the development of new methods of treatment for cancer of the larynx. He has developed an operation for carcinoma of the larynx which in certain instances allows a portion of the vocal cords to remain, thus assuring a near normal speech.

A grant of $375,000 has been made to the School of Medicine by the Gerontological Research Foundation for research in geriatrics. The funds were given in memory of Dr. William B. Kountz. Doctor Kountz, a member of the faculty for 35 years, was scientific director of the Gerontological Research Foundation from 1954 until his death in December 1962.

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Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

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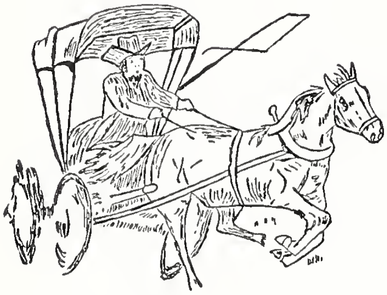
Missouri Medicine in Review



FORTY YEARS AGO

Governor Baker finds himself in a pitiable plight due solely to his lack of ability to grapple a serious problem with boldness and decision. His fatuous excuses for not attacking the deplorable conditions disclosed in the Enloe-Horton-Board of Health scandal will not serve to shift the responsibility from his own to other shoulders. Thrice during the past four years the mantle of shame has been thrown over the fair name of Missouri. In 1921 we became disreputable in the eyes of the entire country when the word "reputable" was removed from the medical law. Happily, that stigma was wiped out in March 1923. The second disgrace, a logical outcome of the first, fell upon us in October 1924, when the medical diploma mill ring was exposed. Now, for the third time, Missouri must bow in humiliation and disgrace while the entire country points the finger of scorn and cries "shame," because of derelictions of the Secretary of the State Board of Health.

Dr. Deborah Doan, of Trenton, a member of Grundy County Medical Society, was married August 8, 1925, to Mr. Earl Phillips, also of Trenton. She will continue to practice.

Under a new ruling of the Board of Education of Kansas City, all children preparing to enter the kindergarten must register their birth certificates at the office of the board of health.

The City Counselor of Kansas City has ruled that osteopaths shall be permitted to examine food handlers and certify their freedom from contagious diseases.

TWENTY-FIVE YEARS AGO

Platform of The American Medical Association:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.
2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.
3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

Guest speakers at the Annual Fall Clinical Conference of the Southwest Clinical Society to be held in Kansas City, in September, will include Drs. Arthur M. Alden and Quitman U. Newell, St. Louis; Dr. John Alexander, Ann Arbor; Dr. Charles A. Bahn, New Orleans; Drs. C. J. Barborka, James G. Carr and Fred M. Drennan, Chicago; Dr. Willis C. Campbell, Memphis; Dr. Elliott C. Cutler, Boston; Dr. Thomas Fitz-Hugh, Jr., Philadelphia; Dr. L. H. Garland, San Francisco; Dr. Roscoe R. Graham, Toronto.

TEN YEARS AGO

The appointment of Dr. Robert J. Glaser as associate dean of Washington University School of Medicine was announced recently by Dean Carl V. Moore. Dr. Glaser was assistant dean.

Dr. Albert I. Mendeloff, associate professor of medicine and of preventive medicine, Washington University, has been named clinical chief of staff in medicine at the Sinai Hospital in Baltimore. He will be the first full time physician-in-chief at that institution. Dr. Mendeloff also has been appointed associate professor in medicine at Johns Hopkins University Medical School.

A dinner was given for I. D. Greene, M.D., of Richmond as a surprise on his 88th birthday on July 17. Present at the celebration were his daughter, his son, two brothers and a sister.

A public reception, which more than 400 persons attended, was held in Ridgeway on June 26 to honor two Ridgeway High School alumni, one of whom was Lake Brewer, M.D., who has practiced in Ridgeway for more than 40 years.

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"...it is extremely difficult and sometimes impossible to differentiate betwe
'pure depression' and anxiety and it is questionable whether depression wit
out a certain degree of anxiety really exists."

Lehmann, H. E., Canad. Psychiat. Assn. J. *4(S)*: 1-12, 1

anxiety
depression
anxiety
depression

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any physicians have reported, the large
rity of neurotic depressed patients suf-
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equently, it would seem that therapy
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alcohol addiction; withdraw gradually after use
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may precipitate recurrence of pre-existing symp-
r withdrawal reactions including, rarely, epilepti-
izures. Should meprobamate cause drowsiness or
listurbances, the dose should be reduced and
on of motor vehicles or machinery or other activ-
iring alertness should be avoided if these symp-
e present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

Supplied: Light-pink, scored tablets, each containing meprobamate 400 mg. and benactyzine hydrochloride 1 mg.

Before prescribing, consult package circular. CD-5749

Deprol® meprobamate 400 mg. + benactyzine hydrochloride 1 mg.

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medical melange

Notes of interest from Here . . . . and There

"Medical Staff in Action—1965, The Utilization Committee," will be the theme of the seventh annual Conference on Medical Services to be held Saturday, Nov. 27, 1965 in Philadelphia. Sponsored by the AMA's Council on Medical Service and its Committee on Medical Facilities, the one-day meeting will immediately precede the AMA's 19th Clinical Convention. According to Russell B. Roth, M.D., Erie, Pa., chairman of the Conference, the objective of the meeting is to bring together recognized authorities from medicine, hospital administration, and other health agencies in order to explore the purpose, philosophy, modes of operation and value of medical staff utilization committees.

Nearly four out of five Americans have health insurance, and last year these insured persons received $8.7 billion in benefits. These were the key findings of the Health Insurance Council's 19th annual survey. The Council said that at the end of 1964 more than 151 million persons had hospital expense insurance. Of these persons, 93 per cent also had surgical expense insurance and 72 per cent had regular medical (non-surgical) expense protection. The Council survey on the extent of voluntary health insurance in the United States is based on reports from insurance companies, government agencies, Blue Cross, Blue Shield, and Medical Society plans. Complete results of the survey will be available soon in booklet form.

Disposable syringes may contaminate aqueous solutions contained in them. The source of this contamination is the rubber portion of the plunger according to Mario A. Inchiosa of the Harvard Medical School. Writing in the September issue of the American Pharmaceutical Association's *Journal of Pharmaceutical Sciences,* Dr. Inchiosa points out the significance of this contamination in view of the extensive utilization of disposable syringes, not only for administering injections but also for transferring solutions and blood in both clinical practice and in the laboratory. Because of prepackaging procedures, solutions may remain in these syringes for long periods of time.

LABSTIX® Reagent Strips, a new colorimetric "dip-and-read" five-way plastic strip test, has been introduced by Ames Company. The new strips are transparent, firmly constructed plastic, permitting precise, reproducible colorimetric readings for urinary pH, glucose, protein, occult blood and ketones. The company claims the device is ideal for rapid testing of patients at home or in the physician's office, and for routine urinalysis by the hospital and laboratory. The strips are available in glass bottles containing a color chart with 100 strips per bottle.

The more than 10,000 American heart patients who have been fitted with implantable electronic pacemakers need have no fear that the pacemaker will be affected by proximity to diathermy machines, neon signs, household appliances, radios, TV sets, or other electrical or electronic apparatuses that generate radiofrequency emissions according to the Public Health Service's National Heart Institute. The Institute said that implantable electronic pacemakers manufactured and commercially available in the United States have been repeatedly tested and found completely free of susceptibility to outside radiofrequency interference. The Institute's statement was prompted by a recent paper published in the *British Medical Journal* which received wide publicity in the United States.

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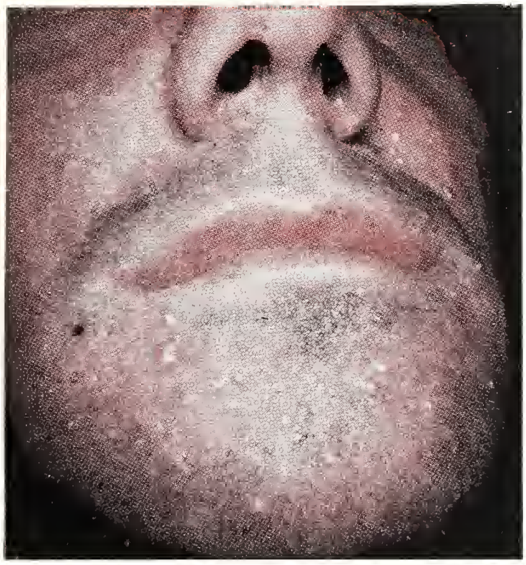
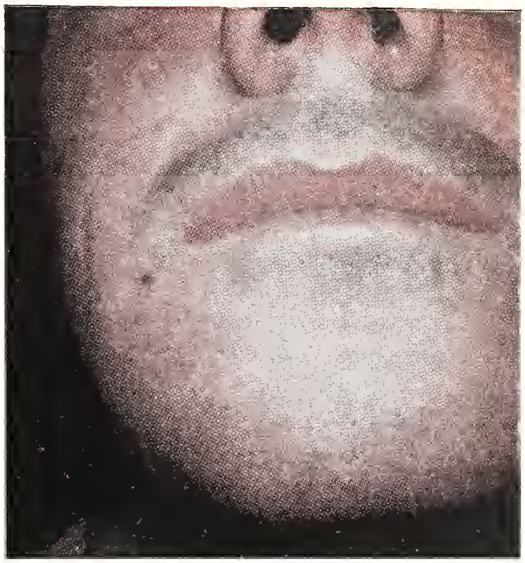
TYPICAL RESULTS



PRIMARY PYODERMA



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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs.

Contraindication: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Complete literature available on request from Professional Services Dept. PML.

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medical melange (cont'd.)

In a comparison of analgesic effectiveness, Alvodine (piminodine) "appears at least as good as morphine" in relieving the pain of acute myocardial infarction, a team of cardiac specialists report in the *American Journal of the Medical Sciences* (249:495, 1965). They add that its good analgesia plus a low incidence of side effects "justify its usage" in the condition. Both analgesics were given in double-blind, random fashion to 47 patients admitted to hospital with pain attributed to acute myocardial infarction. No placebo was used.

A computer-based electronic "early warning system" designed to alert physicians in surgery to swift and subtle physiological changes in a patient's condition is being developed for the Presbyterian Medical Center in San Francisco. The Institute of Medical Sciences, a research affiliate of the Center, and the International Business Machines Corporation have signed a joint study agreement to develop the patient monitoring system. "The major medical engineering problem is to select reliable sensing systems which will produce maximal physiological information with little or no interference to the patient's comfort," Dr. Herbert D. Steinbeck, IBM's life science team manager said.

More than 17,000 copies of "New Drugs: 1965" have been sold to physicians and other medical personnel, the American Medical Association reports. The AMA-published book, designed to give the medical practitioner useful, concise, timely, authoritative and continuously updated information on new single-entity drugs, is now in its second printing. "New Drugs: 1965" has 46 chapters and 271 monographs on single-entity drugs introduced since 1955. Each monograph represents the unanimous opinion of a battery of expert consultants plus the 13 members of the AMA Council on Drugs. Specifically designed for the practitioner, the book's chapters are all organized on the basis of the therapeutic uses of the drugs they describe.

Experiments with an "artificial kidney" made from plastic capillary tubes were described in a paper by scientists of The Dow Chemical Company and the University of Michigan at the recent Urological Research Forum in New Orleans. The authors of the article successfully accomplished hemodialysis in dogs with a unit made from cellulose triacetate capillaries. Each unit consisted of a bundle of 1,000 capillaries, six centimeters long. The inside diameter of the capillaries was 90 microns, and the wall thickness was 20 microns. The membrane surface area of the device was 170 square centimeters with an internal volume of 0.3 milliliters. Each bundle was sealed in a glass jacket fitted with a dialysate inlet and outlet.

The first immunological serum test for early pregnancy is now available to physicians. A laboratory technique devised by Wampole Laboratories permits the UCG-Test—previously employed only on urine samples—to be used on either serum or urine. The UCG-Test detects through chemical reaction the presence of chorionic gonadotropin, one of the first body chemistry products to result from beginning pregnancy. With either serum or urine, the UCG-Test takes only five minutes and gives specific readings within two hours. The earliest and most accurate of immunological pregnancy tests, requiring neither animals nor special equipment, the test reportedly detects pregnancy as early as four days after a missed menstrual period.

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AMA Advises Caution on 'Non-Participation'

The American Medical Association has advised its member-physicians throughout the country that they will risk prosecution under the Sherman Antitrust Act if they act in concert to boycott the government's new "medicare" program (Public Law 89-97). The warning, however, applies only to organized or joint action. After studying all legal aspects of the situation, AMA counsel said that individual physicians, acting independently and not in concert, may lawfully refuse to accept a patient who is receiving benefits under the medical care for the aged program.

The AMA Board of Trustees pointed out that individual physicians who decline to "participate" in the program may face certain other problems. In a formal statement, the Board stated, "The physician's right to practice in a hospital is not vested. He is obliged to abide by the reasonable rules and regulations imposed by the hospital administration. Such rules and regulations may directly or indirectly require the co-operation of the physician in assisting the hospital to participate as a provider of services under the law."

As for AMA's role under Public Law 89-97, the Board said the medical organization will stand ready "to give advice and guidance to the Secretary of Health, Education and Welfare to the end that programs developed and regulations promulgated will provide the stated benefits in the most meaningful manner to our patients with a minimum of disturbance and inconvenience to the medical profession."

Representatives of the AMA have met with President Lyndon B. Johnson and top administration officials and have been assured that no "medicare" regulations will be put into effect until AMA has had a full opportunity to evaluate the proposals and to recommend changes.

Society Pledges Cooperation

The St. Louis County Medical Society has expressed its intention to cooperate in implementing the federal government's new "medicare" program, but at the same time to continue its efforts to correct errors in the law. The Society's Council emphasized that its experience with the Society-sponsored Past 65 Plan puts it in an excellent position to evaluate the operation of "medicare" regardless of any personal feeling that the new law might have engendered.

The Council approved the following statement:

"While it is generally felt that the present Medicare law (Public Law 89-97) was poorly conceived and will not contribute substantially to the general welfare of many of those who will support the law financially or many of those who will be the beneficiaries of its provisions, the Council of the St. Louis County Medical Society announces its intention to do everything within its power, individually and collectively, to put to use in the implementation of the Law of the Land the experiences gained by the operation of its Past 65 Plan since November 1, 1960; and, further, to provide at all times the necessary aid needed by those to be covered by this law so that maximum benefits may accrue to the beneficiaries.

"The St. Louis County Medical Society's existing Grievance Committee is available, as in the past, for negotiations of problems that may arise in regard to patients, insurance companies, physicians, and the agencies designated by the Government to administer this plan."

Greene County Sponsors Athletic Injury Conference

On Friday, July 9, 1965, coaches, trainers and physicians from the Southwest Missouri area gathered at the new Student Union Building at the Southwest Missouri State College campus, for the second Annual Athletic Injury Conference. The event was sponsored by the Greene County Medical Society and held in conjunction with the Southwest Missouri State College Coaching Clinic.

Organized under the direction of Dr. Arch Lowe, Chairman of the Athletic Injury Conference Planning Committee, this year's conference featured Dr. Robert J. Murphy of Columbus, Ohio. Particularly well known for his work in prevention of heat illness in football players, Dr. Murphy is assistant clinical professor of medicine at Ohio State University and team physician for the Ohio State Department of Athletics.

The high point of this year's dinner meeting was the outstanding program which featured, in addition to Dr. Murphy, Dr. Frank D. Sundstrom, who spoke on "Knee Injuries," Dr. Howard J. McAlhany, who spoke on "Treatment of Head and Neck Injuries," and Rex Witherspoon, D.D.S., of the Greene County Dental Society who spoke on "Treatment of Maxillofacial Injuries." Drs. Sundstrom and McAlhany are members of the Greene County Medical Society.

The formal presentations were followed by a panel presentation, moderated by Dr. William H. Snead, President of the Medical Society. The panel presentation allowed ample opportunity for questions and discussions by the registrants.

It was felt by all participants that the conference successfully achieved its goal, which was to offer a broad and intensive view of present day concepts of the prevention and treatment of athletic injuries.

History Joins Science For Clinical Session

The 200th anniversary of medical education in the United States will be observed in Philadelphia as the American Medical Association holds its 19th Clinical Convention there Nov. 28-Dec. 1. The convention is being held in conjunction with the bicentennial observance of the nation's oldest medical school, the University of Pennsylvania School of Medicine.

Physicians and their families will be able to participate in ceremonies observing the school's founding. They also will have opportunities to visit other parts of historic Philadelphia.

Independence Hall, the Liberty Bell, Betsy Ross' house and the old Custom House are among many important historical sites that make Philadelphia one of America's most interesting cities to visit. Philadelphia has many luxurious hotels and colorful restaurants. Blocks of rooms in ten major hotels have been reserved for those attending the convention.

For more information on registration, write to Circulation and Records Department, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

Appeals Court Affirms St. Louis Med Ruling

The U. S. District Court ruling that the St. Louis Medical Society does not qualify as a charitable organization for federal estate tax purposes has been upheld by the Eighth Circuit Court of Appeals.

The lawsuit arose out of a bequest of about $400,000 by the late Mrs. Robert E. Schlueter who specified that the money be placed in a trust fund in memory of her husband. Income from the fund for the next 25 years is to go to the Medical Society for library purposes. At the end of that period, or earlier if the fund's trustee so directs, the principal of the trust also is to go to the Society.

The Internal Revenue Service assessed the trust about $98,000 in estate taxes, and the trustee filed suit seeking to recover this amount on the grounds that the bequest came under the charitable exemption regulations. The District Court in its decision said that "despite the charitable and educational activities of the St. Louis Medical Society admittedly existing, its activities are quite clearly not exclusively within that category, nor are its activities in the legislative sphere non-substantial."

The Court held that for this reason the Society cannot be considered a charitable organization within the meaning of the Internal Revenue Code. The appellate court affirmed the decision.

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PROGRAM

Saturday, October 23 (Daylight Saving Time)

9:00 a.m. Business Session.

10:00 a.m. ROUND TABLE DISCUSSIONS

Table 1. **Coronary Heart Disease,** James Janney, M.D., St. Louis, Clinical Professor of Internal Medicine, St. Louis University School of Medicine, Moderator.

Table 2. **Urological Problems,** Justin Cordonnier, M.D., St. Louis, Professor of Urology, Washington University School of Medicine, Moderator.

Table 3. **Gastro-Intestinal Complaints,** William Knight, Jr., M.D., St. Louis, Associate Professor of Internal Medicine, St. Louis University School of Medicine, Moderator.

Table 4. **Infections in Children,** John C. Herweg, M.D., St. Louis, Associate Professor of Pediatrics, Washington University School of Medicine, Moderator.

(It is suggested that members of the audience move from table to table during the two hour discussion period bringing questions they would like discussed at a particular table. These table discussions will be informal and as practical as the audience wants to make them.)

11:00 a.m. Intermission to Visit Exhibits.

11:30 a.m. ROUND TABLE DISCUSSIONS *(Cont'd.)*

12:30 p.m. Lunch and Visit Exhibits.

SYMPOSIUM ON OBSTETRICS AND GYNECOLOGY

2:00 p.m. **Management of Endometriosis,** H. L. Riva, M.D., Jersey City, N. J., Professor and Chairman, Department of Obstetrics and Gynecology, New Jersey College of Medicine and Dentistry.

2:20 p.m. **Intrauterine Contraceptive Devices vs. Population Explosion,** George Wulff, Jr., M.D., St. Louis, Assistant Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine, and Director, Department of Obstetrics and Gynecology, St. Luke's Hospital.

2:40 p.m. **The Diagnosis and Management of Breast Lesions in the Practice of Obstetrics and Gynecology,** T. L. Montgomery, M.D., Philadelphia, Pa., Professor and Chairman, Department of Obstetrics and Gynecology, Jefferson Medical College.

3:00 p.m. Intermission to Visit Exhibits.

3:30 p.m. **Preventive Medical Measures in Obstetrics and Gynecology,** H. L. Riva, M.D., Jersey City.

3:50 p.m. **The Present Status of Breech Presentations,** David G. Hall, M.D., Columbia, Associate Professor and Chairman, Department of Obstetrics and Gynecology, Missouri University School of Medicine.

4:10 p.m. **New Concepts Regarding the Welfare of the Fetus in Utero,** T. L. Montgomery, M.D., Philadelphia.

4:30 p.m. Panel Discussion on Obstetrics and Gynecology.

PRESIDENT'S INSTALLATION BANQUET

7:30 p.m. Banquet Speaker: Mr. Timothy Hays, Whoopup, Missouri.

Sunday, October 24

GENERAL SCIENTIFIC SESSION

9:00 a.m. **Viral Hepatitis: Problems in Diagnosis and Management,** Maurice H. Stauffer, M.D., Rochester, Minn., Assistant Professor of Medicine, University of Minnesota School of Medicine.

9:20 a.m. **The Clinical Use of Diuretics,** Neal Bricker, M.D., St. Louis, Professor of Medicine, and Director, Renal Division, Washington University School of Medicine.

9:40 a.m. **Current Thoughts on Diabetes,** Lillian Recant, M.D., St. Louis, Associate Professor of Medicine and Preventive Medicine, Washington University School of Medicine.

10:00 a.m. **The Value and Technique of Anorectal Sigmoidoscopic Examination,** Harry E. Bacon, M.D., Philadelphia, Pa., Professor and Head of the Department of Proctology, Temple University School of Medicine and Hospital. (Sponsored by Missouri Division, American Cancer Society.)

10:20 a.m. Intermission to Visit Exhibits.

11:00 a.m. **The Diagnosis and End Results in 2,436 Patients with Cancer of the Rectum and Colon,** Harry E. Bacon, M.D., Philadelphia.

11:20 a.m. **Unusual Causes of Jaundice Simulating Hepatitis,** Maurice H. Stauffer, M.D., Mayo Clinic.

11:40 a.m. Panel Discussion.

12:15 p.m. Lunch and Exhibits.

SYMPOSIUM ON CHEST DISEASES

1:30 p.m. **Clinical Aspects of Pulmonary Function Testing,** Ross C. Kory, M.D., Milwaukee, Wisc., Professor of Clinical Research, Marquette University School of Medicine, Wood Veterans Administration Hospital.

1:50 p.m. **The Gains and Limitations of Newer Diagnostic Techniques in Lung Diseases,** H. S. Van Ordstrand, M.D., Cleveland, Ohio, Department of Pulmonary Disease, Cleveland Clinic.

2:10 p.m. **Obstructive Lesions of the Esophagus—Their Clinical Evaluation and Management,** Hector W. Benoit, Jr., M.D., Kansas City, Thoracic and Cardiovascular Surgeon.

2:30 p.m. Intermission to Visit Exhibits.

3:00 p.m. **Functional Evaluation of Pulmonary Insufficiency,** Ross C. Kory, M.D., Milwaukee.

3:20 p.m. **Auto Immune Diseases of the Lungs,** H. S. Van Ordstrand, M.D., Cleveland Clinic.

3:40 p.m. **The Surgical Implications of Emphysema,** James Mackenzie, M.D., Columbia, Chief, Section of Thoracic and Cardiovascular Surgery, University of Missouri School of Medicine.

4:00 p.m. Panel Discussion on Chest Diseases.

4:30 p.m. Adjournment.

ACCIDENT AND HEALTH INSURANCE

The Missouri State Medical Association since 1943 has made available to its members a Special Disability Income Benefits Policy issued by our "Loyalty Group" Companies now a part of the America Fore-Loyalty Group Insurance Companies—the largest casualty-fire underwriting group in the world. The low cost at which the policy is offered is made possible through the purchasing power of the membership of your association as a whole.
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(Western Missouri Administrators)

New Members

Willet R. Bowen, M.D., 506 West Blvd., S., Columbia, has become a member of Boone County Medical Society. Dr. Bowen is a native of Syracuse, New York, received his preliminary education at Holy Cross College and his M.D. degree at Upstate New York Medical College in 1953. He specializes in pediatrics.

Charles W. Cheek, M.D., 113 W. Broadway, Columbia, has become a member of Boone County Medical Society. Dr. Cheek is a native of Fair Play, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1961. He specializes in ophthalmology.

Jon Clyde Durr, M.D., 1407 S. Waterford, Florissant, has become a member of St. Louis County Medical Society. Dr. Durr is a native of Alton, Illinois, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1964.

William R. Harrin, M.D., 411 Nichols Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Harrin received his preliminary education at the University of Michigan and his M.D. degree at the University of Kansas in 1957. He specializes in urology.

James P. Hopkins, M.D., 701 E. 63rd St., Kansas City, has become a member of Jackson County Medical Society. Dr. Hopkins is a native of Ayer, Massachusetts, received his preliminary education at Wesleyan University and his M.D. degree at Tufts University in 1958. He specializes in plastic surgery.

Gale O. Jones, M.D., 2316 E. Meyer Blvd., Kansas City, has become a member of Jackson County Medical Society. Dr. Jones is a native of Macon, Missouri, received his preliminary education at Northeast Missouri Teachers College and his M.D. degree at the University of Tennessee in 1962. He specializes in anesthesiology.

Clyde V. Martin, M.D., 2625 W. Paseo, Kansas City, has become a member of Jackson County Medical Society. Dr. Martin is a native of Coffeyville, Kansas, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1958. He specializes in psychiatry.

Richard Raynor, M.D., 807 Stadium Rd., Columbia, has become a member of Boone County Medical Society. Dr. Raynor is a native of Tucson, Arizona, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1963. He specializes in general practice.

(Continued on page 818)

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Patients on other uricosurics may be transferred to this drug at full dosage.

Contraindications
Active peptic ulcer. Salicylates and citrates antagonize the drug's action and are contraindicated for concomitant use.

Warning
Use with caution in pregnant women.

Precautions
Keep patients under close supervision and make periodic blood counts. Use cautiously in patients sensitive to pyrazoles, in patients with histories of peptic ulcer, and in conjunction with sulfa drugs, the sulfonylurea hypoglycemic agents, and insulin, the actions of which may be potentiated.

In mobilizing urate deposits, the drug may precipitate acute attacks of gout, urolithiasis, and renal colic, especially in the initial stages of therapy. Ensure adequate fluid intake and alkalinize the urine. With renal impairment, test renal function periodically.

Adverse Reactions
The most frequent are upper gastrointestinal disturbances. The drug may activate peptic ulcer. Rash occurs infrequently. Although not reported to date, blood dyscrasias are a possibility.

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Volume 62, Number 10—October, 1965

Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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JAMES E. BANTA, M.D., *Washington, D. C.*

Importance of Viral Infections in Medical Practice

A review of some of the factors which a practicing physician should consider when dealing with virus disease. Because of its widespread distribution, multiple modes of transmission, virulence and ability to survive or mutate in hostile environments, the virus is a formidable and perplexing medical foe. Immunization using immune serum globulin, live attenuated virus or killed virus offers the most effective weapon in the prevention of infection. Doctor Banta is Medical Director of the Peace Corps and Assistant Clinical Professor of Community Health, University of Missouri Medical Center.

Virus diseases form one of the remaining unconquered frontiers of medicine, for both the clinician and the virologist. In spite of the age of antibiotics and improved clinical facilities, viruses plague man from womb to tomb and from the arctic to the tropics.

In order to successfully do battle, we first must know our enemy. Therefore, we must first consider what a virus is as currently understood in microbiology. A virus is a packet of self-replicating macromolecules. It is an obligate intracellular parasite. It is composed of nucleic acid material at the core of the molecule, while the outside is a protein coat derived from the protein of the host cell. The nucleic acid enters into a living cell, usurps the normal metabolic mechanism of the cell, causing it to replicate virus particles. The particles measure anywhere from 30 to 300 millimicrons—a millimicron being one-millionth of a millimeter. The particles are ubiquitous in their distribution and induce some of the most important and widely distributed disease processes of man. To site a few examples of their ubiquity: influenza and measles are distributed from Alaska to Somalia; infectious hepatitis, the bane of the soldier and the tourist, exists in all climes and countries; German measles present a grave threat in utero, while rabies may present an equal threat to young and old.

Because of the various routes by which viruses are transmitted from one individual to another, they present a particular challenge to the health officer. Viruses may be air borne, water borne, food borne or vector borne. The air borne viruses are important as a cause of respiratory disease, particularly influenza, and the childhood diseases, such as measles, mumps and chickenpox.

Perhaps the two most important water borne and food borne diseases are infectious hepatitis and poliomyelitis. In areas of poor sanitation, infectious hepatitis is a constant and major threat. Military populations, tourists and foreign service people who travel abroad from a sanitary environment to a relatively primitive sanitary environment seem to be particularly at risk.

Insects, such as mosquitoes, lice, fleas, mites, ticks and sandflies, play a major role in the distribution and epidemiology in virus disease. The mosquito is the most important vector and it still constitutes a major threat to the United States, as witnessed by recent outbreaks of encephalitis in Florida, Texas and California. Indeed, the mosquito carrying the virus of St. Louis encephalitis was responsible for the rather sharp outbreak of encephalitis in New Jersey and Pennsylvania just this past autumn. Because of the constant threat of mosquito borne encephalitis, the Public Health Service and State Health Departments maintain continual surveillance programs in a number of states.

A recent sharp outbreak of smallpox in the United Kingdom, which resulted in a number of deaths, points out the constant danger from smallpox which in this age of modern jet transportation can be introduced from endemic foci in a matter of hours. These illustrative examples have been given to point out the importance of an epidemiologic approach when dealing with virus diseases and the necessity for close teamwork between the clinician, the health officer and the virologist, so that early detection and the preventive measures may be brought to bear.

There are a number of properties by which we can classify and better understand viruses. **Perhaps the primary pathogenic characteristic of virus particles is a property known as "tropism," which means that each virus has a predisposition for a particular tissue and organ system. We can use this to clinically classify virus disease into neurotropic, enterotropic, hepatotropic, cutaneous or respiratory. This means that in the natural propagation of the virus specific organ systems become the target of the disease process, as the skin in smallpox or the central nervous system in rabies.**

In vitro, viruses can be adapted to propagate in animals or tissue culture systems that are not necessarily representative of the tissue where propagation occurs in the natural infection.

Another characteristic of viruses which is important to the clinician is the property of virulence. There are several concepts of virulence which may mean different things to the virologist and clinician. Virulence to the virologist means the effect of the virus on the individual cell, and the individual cell may be affected in a number of ways. There may be no detectable change in the cell; there may be proliferation of the particles within the cell, producing inclusion bodies; there may be proliferation associated with altered function in the cell; or indeed there may be total destruction of the cell or a cytopathogenic effect. This capacity of the virus to destroy individual cells is useful in the laboratory as a diagnostic tool, as for example the use of tissue cultures in the diagnosis of poliomyelitis.

While the virologist thinks in terms of the effect of the virus particle on the individual cell, the clinician is usually thinking in terms of the effect of the virus infection upon the host, that is the total animal. However, it should be borne in mind that this total effect is really the result of the infection of many individual host cells. For example, in the case of poliomyelitis as much as 60% of the individual horn cells may be destroyed before muscular weakness is exhibited by the patient. This threshold phenomenon has great significance when we consider that there are many naturally occurring inapparent infections in which many individual cells are infected and virus multiplication is occurring, but where not enough cells are infected or destroyed to produce clinically recognizable signs and symptoms in the host. Indeed, the only evidence of infection might be a rise in antibody titer. However, the individual, though he has only an inapparent infection, is vitally important in the spread of the disease through the community. From the epidemiologic point of view, it is quite as important to identify the individual with an inapparent infection as the patient who is overtly clinically ill.

The study of any epidemic in a community involves the taking of blood from many individuals who have not exhibited overt clinical signs and symptoms of the illness. Yet, if the true extent of an epidemic is to be assessed, this can only be accomplished in many cases by determination of antibody titer in the total population at risk.

Another characteristic of virus particles is their host specificity. Not only do viruses have specificity for a particular organ system of the body, but also for the animal host. The infectious hepatitis virus is meticulously specific, in that it will propagate only in man. As a result of this, there is no tissue culture system or experimental animal which will enable us to study the virus in the laboratory, and thus no vaccine for prevention. Many viruses normally propagate in all warm blooded animals and may accidentally infect man, e.g., rabies virus which normally is present in wild rodents and carnivores. Some viruses, such as encephalitis, are maintained in nature by cycling through birds and mosquitoes with man or equines becoming accidental hosts.

Another characteristic of viruses is their stability, the ability of virus particles to survive in nature in a variety of environment circum-

stances. Many viruses tend to be highly resistant to heat, drying, cold, ultra-violet, solvents and chlorination. This presents an obvious challenge to the sanitary engineer and microbiologist.

One characteristic of viruses which make them particularly difficult to control on a clinical basis is their high rate of spontaneous mutations. Viruses tend to be highly mutagenic. This property of the influenza virus has grave implications for the control of the disease. It is very difficult to prepare a vaccine which can remain effective against a virus particle, rapidly changing its immunological characteristics due to mutation. This means that influenza vaccine which is given this year may be completely ineffective next year because the virus in the meantime has changed. Because of this, the World Health Organization has an International Influenza Surveillence Program so that the latest strains of influenza causing outbreaks may be monitored and new vaccines prepared to meet new and changing immunologic character of the virus. This mutagenic characteristic has implications clinically for the use of live virus vaccine. Nonpathogenic strains, employed as vaccines, can theoretically undergo spontaneous mutation in the host and change into a strain which is pathogenic when shed and spread to others in the community.

The pathogenicity of virus disease characteristically evolves in definite steps. The first step is entrance of the virus into the host and infection of a single cell by a single virus particle. This is accomplished by either the oral, respiratory or cutaneous route which may be accomplished by hyperdermic injection, either by courtesy of a physician's unsterilized needle or an insect's proboscis. After the virus particle gains entrance into the host, it finds its way to the initial individual cell site, becomes attached, enters the cell and undergoes primary multiplication. When the virus particle replicates to the stage where the individual cell membrane is disrupted, the particles are disseminated. They may be disseminated to contiguous surrounding cells or spread to other cells by means of either hematogenous or lymphatic spread. Then the virus particles undergo a second cycle of multiplication in the secondary sites. Mumps virus, though primarily in the parotid gland, might undergo secondary multiplication in either the brain or the testes; and measles virus can undergo multiplication in the brain causing encephalitis.

After undergoing multiplication, the virus particles are excreted from the host, the site of excretion having significance to procedures for prevention of further spread. For example, early in the phase of excretion, polio virus may be excreted by the respiratory tract while later on the disease is excreted in the stool. Finally, the virus particle is likely to produce an immune response in the host. This usually commences about three or four days after infection and produces various types of antibodies. The antibodies which usually tend to respond first are the neutralizing antibodies, while later on in the course of the disease, the complement fixing antibodies are produced.

The complement fixing antibodies tend to decline after a few weeks or months, while the neutralizing antibodies tend to remain elevated. Thus, an elevated titer of complement fixing antibodies usually indicates a recent viral infection. For diagnostic purposes demonstration of a rising antibody titer is desirable. A fourfold rise in titer is usually considered a diagnostically significant rise in titer. These antibodies are useful both for diagnosis and for protecting the host from subsequent attack. In an individual who has been previously immunized, a rapid booster effect with a significant rise in neutralizing antibody titer occurs.

It is important to know that the immunity produced by virus infection is not an all-or-none phenomenon and that different levels of antibody titer are produced. This means that subsequent infection may occur if there is a low antibody production or if there is an overwhelming infection by a subsequent exposure. Because of the mutagenic properties of virus, immunity to one strain of virus does not necessarily ensure immunity against another strain. Clinical significance in this is that people may have repeated episodes of the same virus disease.

This brings us to the clinical characterization of virus disease. There are certain clinical characteristics which may be considered. The incubation period is important diagnostically to the clinician, as in the case of infectious hepatitis versus serum hepatitis. In infectious hepatitis, the incubation period tends to be shortened up to six weeks, while the serum hepatitis may be up to six months. This incubation period is useful clinically in distinguishing which viral agent is responsible for hepatitis. The incubation period of virus diseases exhibit a great range. For influenza it may be a matter of hours, while with rabies it may be a matter of months.

Clinical symptoms associated with virus infection are variable, but yet there are some signs and symptoms which would arouse suspicion. The presence of the aseptic meningitis syndrome, i.e., headache and nuchal rigidity, with slight fever will certainly make one suspicious of virus infection. This suspicion will be reinforced by leukopenia, lymphadenopathy and the characteristic "double hump" temperature curve.

A short incubation period and a high infectivity rate can point toward virus disease; and because of the characteristic tropism of the agent, the virus usually multiplies in a particular site and this multiplication tends to characterize the clinical syndrome, as for example, jaundice in hepatitis.

Probably in no other group of diseases is epidemiology so important to the clinician as is the case of virus disease. The practitioner plays a strategic role in helping control the spread of an epidemic in the community.

There are three things which every clinician can do to ensure good community medical practice in this regard.

First, a good clinical description of the disease, with an accurate recording of the evolution of the signs and symptoms is most valuable. It is not only the keystone of good clinical medicine but good epidemiology and virology.

Second, early and complete case reporting to the health authorities is necessary so that in the face of a beginning epidemic measures may be taken to bring the disease under control as expeditiously as possible.

Third, the physician must bear in mind that serological methods are the only absolute diagnostic criteria in most cases of viral diseases. If isolation of the virus can be accomplished, it is highly desirable; unfortunately, it is often not feasible, although tissue culture has improved the prospects. Virus may be isolated from nasal washings, vesicular fluid, stool filtrates and cerebrospinal fluid. These specimens with suitable preparation can be inoculated into tissue cultures, embryonated eggs or experimental animals. It is necessary to coordinate collection and preparation of the specimen with the laboratory to insure optimum opportunity for isolation of an agent.

Serological tests employing hemagglutination, complement-fixation and neutralization tests are efficient diagnostic tools. These are usually available at larger medical centers and through the health department. It is very important to obtain an acute and convalescent blood specimen free of contamination and free of hemolyzed red blood cells. The acute specimen should be drawn as early as possible in the course of the disease, while the convalescent specimen may be drawn several weeks after the disease has abated. This will facilitate demonstration of significant antibody titer change. It may not always benefit the individual patient clinically, but is of vital importance in practicing community medicine.

There is a tendency on the part of some clinicians to ascribe virus etiology to certain diseases which are obscure but which exhibit certain of the clinical characteristics of virus disease as prevously mentioned. This unsound practice can be obviated if scientific principles are adhered to. What the the criteria for establishing the virus etiology of a particular disease process? First, a consistent clinical picture; second, isolation of an agent; third, specific antibody response; fourth, passage of the agent with a consistent clinical response and antibody response; and last, characteristic epidemiologic pattern in the community.

To fully establish all of these criteria requires close teamwork of the clinician, the epidemiologist and the microbiologist. The clinician's contribution is especially valuable since there is no substitute for good clinical description of disease.

Our goal as physicians is prevention of disease, and this is our only effective tool in dealing with virus disease at the present time, although there are clinically useful chemotherapeutic tools on the horizon.

There are two principal techniques for the prevention of virus infection: passive immunization and active immunization. Passive immunization is usually accomplished by the use of immune serum globulin, particularly against infectious hepatitis, mumps, measles, polio and rabies. In our experience in the Peace Corps, infectious hepatitis has been in the past a serious problem but in large measure presently prevented by employing immune serum globulin. It is given to all individuals every six months in the amount of 0.05 ml. per pound body weight in an exposed environment. Though immune serum globulin is an expensive product, it is far less expensive than prolonged hospitalization. The ideal method of prevention is active immunization, employing either live attenuated virus or a killed virus. There is great precedent for the use of live attenuated virus, in that Edward Jenner employed cowpox nearly two centuries ago to prevent smallpox.

There are certain problems in the use of live virus. There is the problem of preservation of the virus (that is, keeping it alive), the safety of the virus in terms of its virulence and maintaining pure virus so that extraneous viruses are not introduced from either the tissue culture or the host.

There is also the problem of mutation, by which a live attenuated virus may revert to a pathogenic strain. A killed virus doesn't present the hazards of a live attenuated vaccine. However, the disadvantage in using killed virus is that there is often not as good a protective antibody level produced. As a result, there have to be booster immunizations, while live virus usually provides life-time immunity or at least requires fewer boosters. In addition, in killed virus vaccines there may be present foreign protein which can induce an unwanted allergic response.

I have endeavored to briefly review some of the factors which a practicing physician should consider in his encounter with viral disease. By being aware of these factors, it is hoped that the clinician can better diagnose and treat his patients infected by virus, and above all prevent the occurrence of virus disease among his patients and in his community.

FRANCIS X. PALETTA, M.D.,* ***St. Louis***

Primary Treatment of Hand Injuries

PROPER MANAGEMENT OF ACUTE INJURIES of the hand is directly proportional to the functional results obtained. There are two phases to be considered. The first phase is the examination of the acutely injured hand. (Inventory of the injury.) It has been our policy that when the patient is first seen in the emergency room that a sterile dressing is placed over the wound, together with a moderate pressure dressing. This frequently will stop most of the oozing that is present. If one of the arteries has been lacerated, however, ligation is necessary.

With the wound covered, a systematic examination of the functions of the tendon, nerve supply and bony framework are evaluated. Flexion of the distal phalanx indicates the presence of a functioning flexor profundus tendon; and when both flexor digitorum profundus and flexor digitorum sublimis are lacerated, there is no motion of the finger.

If the laceration is on the dorsum of the hand, the extensor tendons are tested. This is all tabulated in regard to the specific finger of involvement. The cutaneous sensory supply of the hand is then tested to indicate whether one of the larger branches of the radial, median or ulnar nerve has been severed, and, in the case of the fingers, whether the radial or ulnar component of the digital nerves has been injured. This is also tabulated. Bony injury of the phalanges or metacarpal bones can usually be ascertained by the history, position of deformity and X-ray.

With this inventory of the type of injury present, the patient is brought to the operating room for treatment. The only injuries of the hand that are repaired in the emergency room are lacerations of the skin. I do not feel that a room where carbuncles are drained and stomachs are pumped is a good environment for the treatment of compound wounds of the hand. Tetanus toxoid and antibiotics are started in the emergency room before the patient is admitted to the hospital.

It is preferable to perform surgical procedures on the hand under tourniquet. A modern pneumatic tourniquet is the treatment of choice. We routinely express all of the blood from the hand and forearm with an Esmarch bandage before applying the pneumatic tourniquet. The hand is thoroughly scrubbed with soap and water and one of the iodine type of antiseptics, such as tincture of iodine or betadine, is used.

If iodine is applied, it should be removed with alcohol. We do not like to use color antiseptics such as mercurochrome or merthiolate since they interfere with following the color of the skin and cover up an inflammatory process which might be developing. Before the tourniquet is applied, viability of the tissue should be determined. If the skin flap is white or the entire finger is white and has no pulsation, attention must be directed to the vessels in order to save the part; otherwise, amputation of the finger may be necessary. The tendon severed ends are picked up by elective incision rather than running clamps up and down the tendon sheaths. These elective incisions are placed in the creases of the palm of the hands and along the sides of the fingers, never vertically up the palmar surface of the fingers. When both flexor tendons are severed in the finger, there are some who feel that no tendon repair should be done in the finger proper. Bunell has termed "no man's land" as that area between the head of the metacarpal and the middle phalanx. Results of tendon repair in this area have been poor. However, I personally feel that in selected cases, particularly in children, when both flexor tendons have been injured much benefit may be derived from an effort to resect the sublimis tendon and repair the profundus tendon.

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* Professor of Clinical Surgery from the Department of Surgery Section in Plastic Surgery, St. Louis University School of Medicine and University Hospitals.

The best results are attained when hand injuries are repaired within a few hours. Although the time interval has been stretched from two hours to eight hours with the advent of antibiotics, the earlier they are repaired, the better. When there is associated bony injury, attention to the fracture is best done primarily and the tendon repair considered as a secondary repair when the tissues are soft and quiescent. Nerve injuries should be repaired primarily rather than secondarily as the British advise. A pressure dressing separating the fingers with fluffs and mechanic's waste, placing the hand in a position of function is a necessary requirement in the dressing of the hand. We prefer to keep the patients in the hospital for five days where they are given antibiotics and the hand kept elevated. When the injuries have a severe crush factor, the prognosis is much poorer. We have been applying hypothermia in these cases in order to reduce the amount of edema that develops. No wound of the hand should be left open unless there is frank evidence of infection. Avulsion of the skin should be covered with a split thickness graft wherever possible. If tendons and bone are exposed, a pedicle flap is preferable since many of these require secondary procedures.

Kansas City's Menorah Medical Center and Danciger Institute for the Health Sciences will stage five monthly seminars on Management of Patients with Chronic Diseases beginning this November and running consecutively through next March. The two-day sessions are designed as continuing education courses for practicing physicians in Missouri, Kansas, Nebraska, Iowa, Oklahoma and Arkansas. The five-month program is co-sponsored by the Greater Kansas City Academy of General Practice. Each seminar has been approved for 10 hours of credit by the AAGP Commission on Education. The seminars will be held at Hammack Auditorium in Menorah Medical Center, 4949 Rockhill Road, Kansas City, Mo. Registration is free but participants will be expected to pay for meals. Dr. Aaron D. Freedman, chairman of the Department of Medicine of the center and director of experimental medicine of Danciger Institute, will be in charge.

The program:

- November 3 and 4 (Wednesday evening, all day Thursday)—
  "Restoration of Functions in Chronic Respiratory Diseases"
- December 8 and 9 (Wednesday, all day, Thursday, all day)—
  "Maintenance and Restoration in the Aging Patient" (Wednesday)
  "Opportunities and Limitations in the Treatment of Alcoholism" (Thursday)
- January 5 and 6 (Wednesday evening, all day Thursday)—
  "Renal Diseases"
- February 2 and 3 (Wednesday, Thursday as above)—
  "Arthritis and Skeletal Injuries"
- March 2 and 3 (Wednesday, Thursday as above)—
  "Metabolic Diseases"

Dr. Freedman said the seminars will emphasize long-term treatment and rehabilitation rather than diagnosis and acute therapy. Faculties, he noted, will include top national figures in the subjects covered.

WILFRED E. WOOLDRIDGE, M.D. *and*
ERNEST LORENC, M.D., *Springfield*

Cancer of the Lower Lip Treated With Combined Superficial X-Rays And Gamma Radium Rays

Case Reports

A sequel to a paper by the same authors which appeared in the September issue of MISSOURI MEDICINE. This one describes a technique of treatment of carcinoma of the lip, using a combination of superficial X-ray and gamma rays of low intensity from interstitial radium needles. The series reported consists of 64 consecutively treated lip cancers, of which 59 were followed for at least two years. The cure rate of primary lesions was 100%. Doctors Wooldridge and Lorenc are in the private practice of medicine and both are Consultants in Dermatology, University of Missouri School of Medicine. Doctor Wooldridge is also Visiting Lecturer, University of Oklahoma School of Medicine.

IN A RECENT ARTICLE,[1] we published the results of treatment of a series of 522 patients with a total of 580 lesions of basal and squamous skin cancer. This treatment was accomplished by the combination of superficial X-rays and gamma radium rays. Of these lesions, 525 were followed at least two years and 523 were cured, a cure rate of 99.4%. In that article we stated that no single approach to the treatment of skin cancer could yield the best results in all cases, because the varying problems posed by the size, type and location of lesions would make a choice of treatments superior to any single technique.

In a consideration of lip cancer, however, some of the factors noted above disappear, for one is dealing exclusively with squamous cell lesions, all of which occur in the same location. The size of a given lesion, however, certainly remains a formidable consideration. For instance, the simple V-excision, which we employ in approximately 40% of our cases when the wedge need be no wider than two centimeters, is impractical in cases necessitating an excision much wider than that. It is particularly because of these larger lesions of the lip that we wish to report the technique of combined irradiation with superficial X-rays and interstitial, low intensity gamma radium rays and to report also the results which can be obtained by this treatment. It is our opinion that this treatment is much preferable to that of complicated surgical procedures causing time-consuming hospitalization and attendant expense.

THE CASE FOR COMBINED RADIATION

In our previous article dealing with the techniques of combined superficial X-ray and gamma radium ray treatment of basal and squamous cell skin cancer, we dealt in considerable detail with the concept, developed in 1930 by Quimby and Pack,[2] that two wave lengths of ionizing radiant energy were better tolerated by tissue than was an equal dose of a single wave length. This concept was adapted and refined into clinical usefulness by the studies of Lamb and others[3-8] over a period of several years. The result of these studies has been the technique of combined X-ray and gamma radium ray treatment, which we have employed now for more than 10 years and which has achieved the very considerable success reported in our previous communication, referred to above.

MATERIALS AND METHOD

The lower lip cancers reported in this article were all of those treated with combined X-ray and radium therapy during the five year period, 1954 through 1958. All of these lesions were confirmed by histological examination. These total 62 patients with 64 lesions. Of this number, 57 patients completed a follow-up period of two years' minimum and, for most of those, that period was extended to three years. None of the remaining five patients, which were lost to follow-up, were known to have any recurrence of their lip cancer. Two of these five died during the follow-up period, one of cardiovascular disease at 15 months' post-treatment. This patient was reported to be well of his cancer at the time of death. The age distribution of these patients is shown in Table I and the size of the lesions in Table II. Fifty-nine of these lesions were previously untreated while five were recurrent. Four of the recurrent lesions had received surgical treatment and one radiologic.

TABLE I

AGE DISTRIBUTION OF PTS. WITH CARCINOMA OF LIP

20-30 yrs.	1
30-40 yrs.	4
40-50 yrs.	15
50-60 yrs.	16
60-70 yrs.	14
70 yrs. +	12
Total	62*

TABLE II

SIZE OF LESIONS TREATED

Less than 1 cm.	14
1-2 cms.	39
2-3 cms.	4
3-4 cms.	3
Greater than 4 cms.	4
Total	64

* Two Patients had two lesions, making the total number of lesions 64.

The combined radiation treatment of these patients was of a single type; an initial exposure of superficial X-ray, immediately followed by the implantation of interstitial, low intensity radium needles which were left in place for five days. The total amount of radiation thus administered in the five-day treatment period was 5500-6000 roentgens.

Most of the lip cancers in this series could be nicely treated with two 27 mm., 2 mg. needles each, with an active length of 15 mm. and a wall of 0.5 mm. of platinum (Fig. 1). This amount of filtration was sufficient to permit only the passage of gamma rays. Some of the larger lesions necessitated use of three or even four such needles; and two patients, each with two large lesions, were treated with six.

The placement of these interstitial needles was made with great care, since the dosage calculations were based upon a distance of one centimeter from the linear center of one needle to the next. A lesser distance would result in over-radiation with an increased likelihood of sclerosis and radionecrosis of tissue, while a greater distance between needles might result in insufficient treatment of tumor cells. Likewise, when dealing with larger lesions, it was necessary that no overlapping of the active ends occur for such would lend to rather intense overtreatment. These practical considerations made it advisable to approach a given lesion with a treatment plan in mind and often to sketch with a skin pencil the pattern of needles before infiltration of a local anesthetic distorted the field.

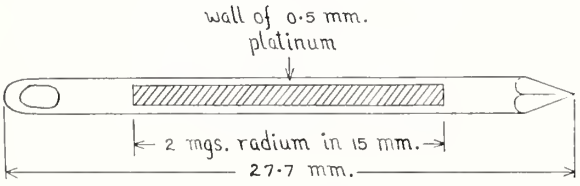

Fig. 1 Diagram of two milligram needle used in treatment of carcinoma of the lip.

CASE REPORTS

Case # 1: White male, age 76. Squamous cell carcinomas, two lesions on red of lower lip. The larger lesion (left side), duration six months, appeared after a cigarette burn. The smaller lesion (right side) appeared two months later without trauma. Both lesions untreated. Examination showed the larger lesion to be ulcerated, indurated and to measure 15 mm. in greatest palpable diameter. The smaller lesion measured 12 mm. and was a firm plaque without ulceration. No lymphadenopathy. Biopsies of the two lesions were similar except for ulceration.

Treated with combined superficial X-ray and interstitial, low intensity, radium needles for five days. The single exposure of X-ray was given to the entire field, including both lesions. Each lesion was then immediately treated with two interstitial needles. Tumor dose, 5500-6000 roentgens. Patient followed for three years and remained well (Fig. 2).

Case # 2: White male, age 50. Squamous cell carcinoma, two lesions on red of lower lip. At age 35, had a small ulceration on right side of lower lip which was treated with a caustic. A lesion reappeared at that site at age 37 and was treated with electrocautery, leaving a considerable scar. At age 42 a nodule again appeared at that site and gradually increased in size. At about age 40 a V-lip excision was performed on the opposite side of the lower lip. This was followed by recurrence after 18 months. The patient was then referred to us for evaluation and further treatment.

Examination showed a foul, purulent crater on right side of lip which was surrounded by induration which extended also beneath the crater. Toward the left, lesion became a firm, superficially ulcerated, narrow plaque. Total width 35 mm., greatest A-P diameter 12 mm. There were several, palpable, small submental lymph nodes bilaterally. These were considered probably enlarged due to the presence of infection in the lip.

Treated with combined superficial X-ray and interstitial low intensity radium needles for five days. A single exposure of X-ray was given to the entire field and immediately followed by implantation of three needles to the right side of the lip and a single needle beneath the plaque extending onto the left side. Tumor dose, 5500-6000 roentgens.

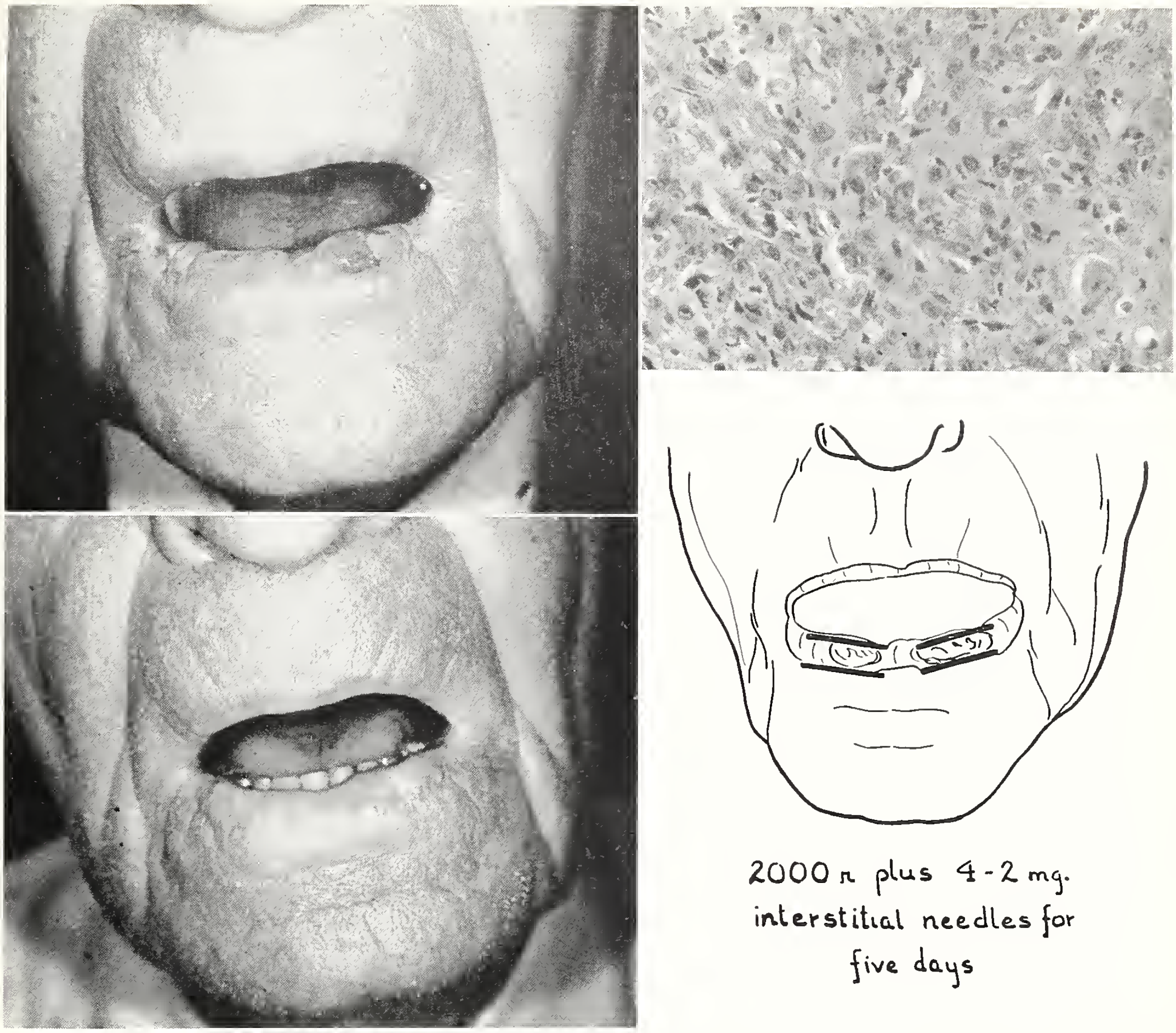

Fig. 2 Photographs in Case No. 1 showing two lesions on lower lip before treatment and 18 months after treatment. Microphotograph of biopsy tissue. Drawing shows method of treatment with radium needles.

Following treatment of the lip, size of submental nodes was unchanged for four months at which time a single node on the right side became larger. A bilateral, suprahyoid neck dissection was performed and the large node found to be metastatic squamous cell carcinoma. This was the only positive node. Patient followed for two and one-half years and remained well (Fig. 3).

Case ♯ 3: White male, age 65. Referred by Doctor Howard Carrington. Squamous cell carcinoma. Two years duration. Began on center of lip. Untreated. Examination showed a hard, infiltrating, everting tumor, 20 x 45 mm. There was gross secondary infection. No lymphadenopathy.

Treated with combined superficial X-ray and interstitial, low intensity radium needles for five days. A single exposure of X-ray was given and immediately followed by implantation of four interstitial, low intensity, radium needles in the tumor. Tumor dose, 5500-6000 roentgens. Patient followed for two years and has remained well (Fig. 4).

Results of Treatment

Of a total of 64 lesions, 59 of these which occurred in 57 patients, were followed for at least two years and, in most cases, for three years. In these patients, on whom follow-up examinations were complete, the cure rate of the treated lesion was 100%. The remaining five patients (8%), not completely followed, were checked for varying lengths of time after treatment, the shortest period being three months. Each of these five had single smaller lesions and, in each case, healing of the treated site occurred following treatment.

Included in the above cures are two patients whose lip lesions responded satisfactorily to treatment and remained well but who developed regional metastases. In each instance, the primary lesion was very large. In each, also, the metastasis became evident soon after treatment. One of these was Case ♯ 2 of this paper. The

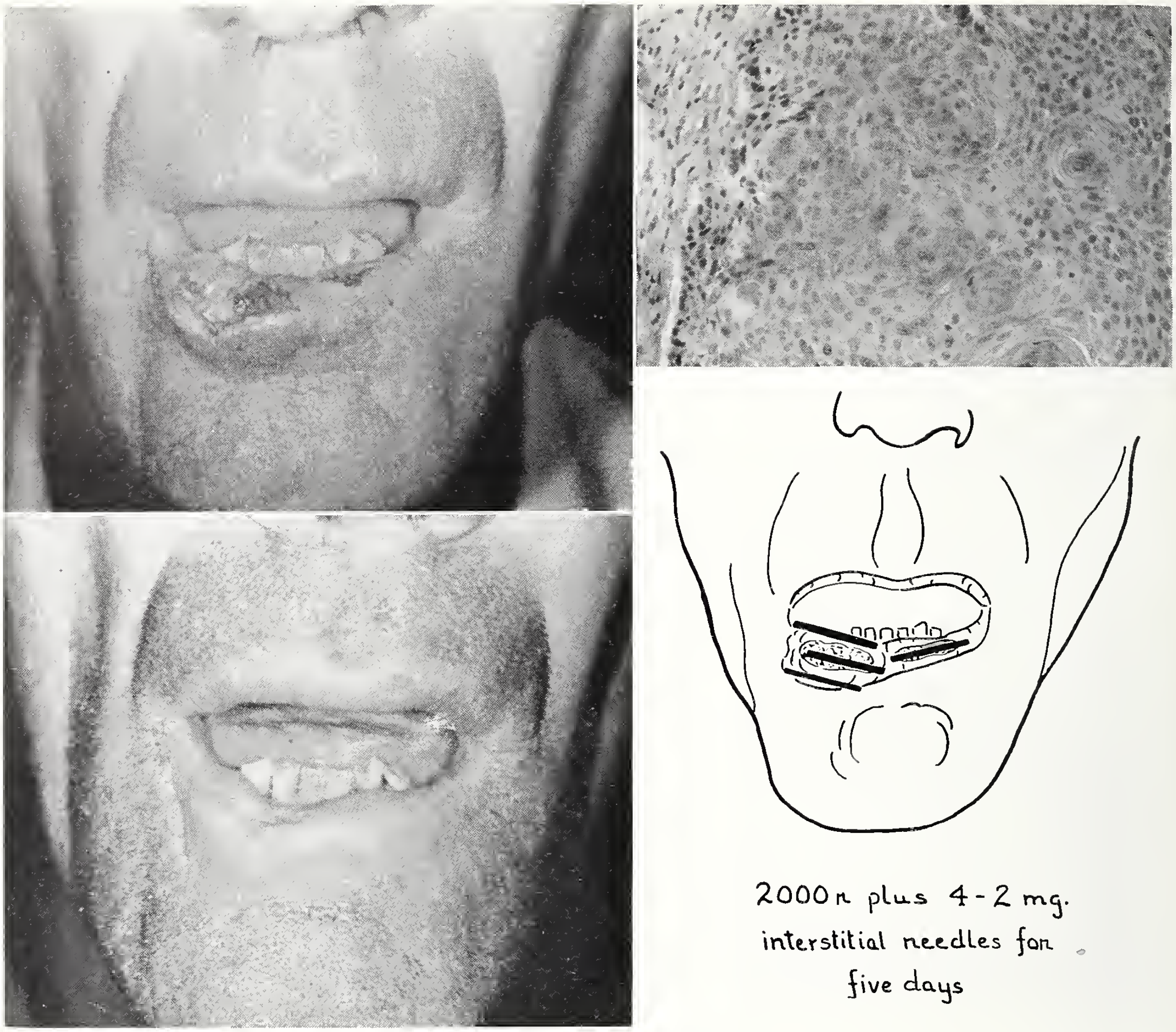

Fig. 3 Photographs in Case No. 2 showing squamous cell carcinoma lesions on lower lip before treatment and 24 months after treatment. Microphotograph of biopsy tissue. Drawing demonstrates placement of needles during treatment.

second patient who developed a metastasis had a lesion measuring 40 mm. x 20 mm. which was treated with X-ray and six interstitial needles. Five months later a submaxillary node became involved and neck dissection was performed. The primary site remained well and the patient had no further trouble.

As was true of our cases of skin cancer, the patients with lip lesions were not selected in any way to exclude those considered to be bad treatment risks. In fact, the principal selection was in the direction of excluding smaller and simpler lesions, those treated with V-excision. The only patients not treated were a few with recurrent lesions who were known to have received prior radiotherapy and in whom the amount of that treatment could not be determined or in whom such treatment was enough to preclude further use of radiation without a prohibitive risk of radionecrosis.

In the group of 57 patients with a total of 59 lesions, which group was followed two to three years, radionecrosis occurred six times (10.1%). Two of these necroses developed after trauma. In all six instances healing was achieved without surgical intervention, although sufficient notching of the lip remained in one patient so that surgical repair is contemplated. Two of these necroses developed between one and two years after treatment and the remaining four between the third and fourth years.

DISCUSSION

It is very satisfying that we have not encountered any failure to heal the lip cancers of this limited series. Such results with combined superficial X-ray and interstitial gamma radium rays should not be surprising. During the years when this technique was in evolution, Lamb reported a series of 318 patients with lip cancer of which 52 were treated in the above manner. Among these 52, he experienced only a single failure; that, in a patient with a recurrent lesion already treated with radiation.[7]

It is inevitable that we will meet with failures as our series increases in size for, even if the method approaches perfection, the human element does not. It may be added, however, that the larger series, which covers a greater span of years and which is presently under study, still shows no instance of failure to cure the primary lesion with a single course of treatment. Such degree of success is doubly encouraging when compared to series treated by other methods. One may thus refer to the 67% of "symptom-free" cases of Smithers treated with X-ray.[9] Similarly, Traenkle and associates report seven "failures" in 158 cases treated with X-ray.[10] A more comprehensive article, embracing all forms of treatment of 3,166 cases of lip cancer registered in the Ontario Cancer Treatment and Research Foundation Regional Clinics, reports control of the primary lesion in 84%.[11]

It is our hope that further experience and modification of technique will allow us to reduce our radionecroses below the 10.1% reported. This figure is higher than the 8.5% of Ebenius, which was found in his series of 778 cases, and which series we regard as authoritative.[12] Perhaps some comfort may arise from the fact that most of our radionecroses occurred from treatment administered while we were perfecting our techniques.

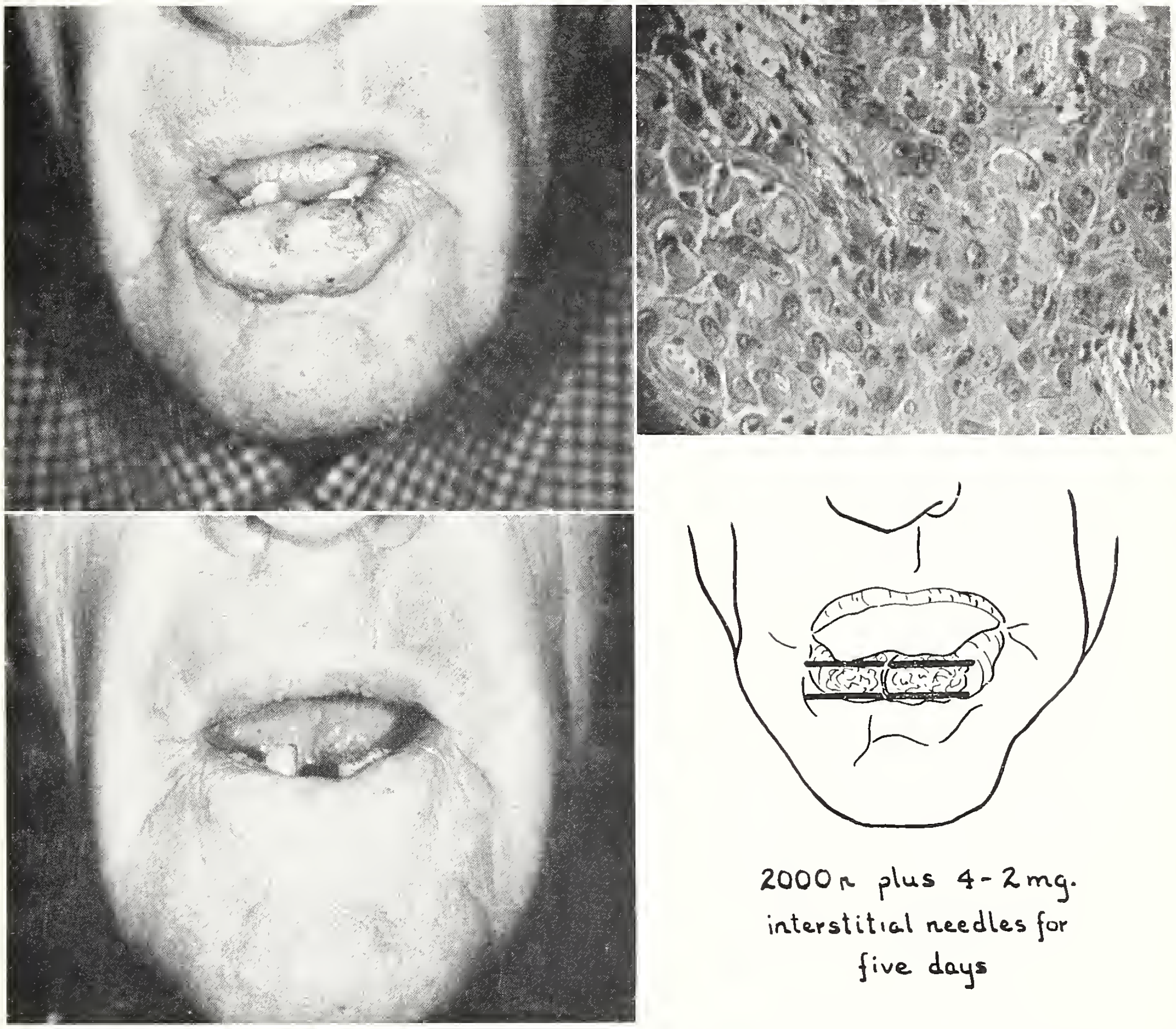

Fig. 4 Photographs in Case No. 3 showing squamous cell carcinoma of two years' duration before treatment and 18 months after treatment. Microphotograph of biopsy tissue. Drawing demonstrates placement of four interstitial needles.

However, our figure is less than is reported in other series and substantially less than that of the 19.6% of the cases reported by Ebenius when various forms of combined treatment were employed. It should also be understood that small percentages of radionecroses do not constitute a condemnation of method. They are an assumed risk, as stated by Paterson, "It must therefore be realized that necrosis will unavoidably occur in a small proportion of cases if tumour lethal dosage is being given."[13]

In addition to the rate of cure achieved with the combined superficial X-ray and interstitial gamma radium ray treatment, there is the superior acceptance of this treatment by the lip tissues. Admittedly, some individuals heal better than others, but following combined treatment a pliable, soft, serviceable lip may be expected, one which shows a minimum of sclerosis and, ofttimes, no visable sequelae of treatment unless it be loss of whiskers inferior to the lesion. It should also be remembered that the procedure of treatment incurs no patient morbidity, no hospitalization, little interference with work and minimal expense.

Although numerous techniques have been described for the treatment of lip cancer with surface-applied radium,[14, 15] we have avoided these procedures because they are more complicated and time consuming and are more hazardous to the operator since they necessitate greater exposure. Equally important, we have preferred interstitial application because a proper intensity of treatment can thus be assured in the deeper portion of the tumor. This point has also been emphasized in the monograph of Martin and Martin.[16] We believe the homogenous radiation field can be particularly well designed when the gamma radium interstitial treatment is combined with the less penetrating surface-applied superficial X-ray.

The ideal of equal amounts of ionizing radiant energy to all parts of the tumor is sometimes made difficult because of variations in the size of the lip. Proper spacing of the interstitial needles exists when there is a distance of one centimeter from the linear center of one needle to the linear center of the next. This is most easily achieved when a patient has a full lip. It becomes more difficult with the thin lip because one or more needles must be moved toward the tumor periphery to prevent excessive treatment due to crowding the needles.

We have purposely not graded our tumors according to histologic type, although all were studied microscopically. Since we had none which failed to respond to treatment, such grading would have meant nothing as to curability. Also, our biopsies were small, performed as atraumatically as possible and, although sufficient to establish a diagnosis, not sufficient to allow a detailed pathologic report. Tumors can vary greatly in histologic characteristics from one portion to another, and a detailed statement of histology must therefore be based upon a study of the entire tumor, or else one must be content merely to establish the presence or absence of malignancy. Such was our purpose.

SUMMARY

A technique for treatment of carcinoma of the lip with a combination of superficial X-ray and the gamma rays of low intensity interstitial radium needles is described and illustrative cases are presented. Although the authors treat 40% of their cases with simple V-excision, the larger lesions are treated with combined radiation. The superiority of this radiation as opposed to complicated surgery is discussed. One hundred percent cure of the 59 lip cancers, followed two years or more, was achieved. Five patients were not completely followed; but, of these, none were known to have had further trouble.

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Magnitude of Rheumatic Fever and Rheumatic Heart Disease in Missouri

In 1962 the Missouri Heart Association established a committee on rheumatic fever and congenital heart disease. At its first meeting, the committee was concerned with the fact that there was relatively little knowledge about the extent of rheumatic fever as it exists in Missouri. As in a number of other states, rheumatic fever and rheumatic heart disease are not reportable diseases. In the past few years surveys have indicated that rheumatic fever and rheumatic heart disease have not declined to the extent that once was thought.

After a five-year study of a selected age group of over 500,000 college students representing 137 colleges Marienfeld *et al*[1] found 9,044 cases who were believed to have had rheumatic fever. An average prevalence rate of 17.5 rheumatic fever cases per 1,000 students was established. In addition, the average prevalance rate for rheumatic heart disease was found to be 5.7 cases per 1,000 students. The authors indicated that their findings were in sharp contrast to the decrease shown in official morbidity and mortality statistics. They concluded that rheumatic fever and rheumatic heart disease were of continuing public health importance. Statewide surveys would seem to support these findings. In 1955, Fleming *et al*[2] conducted a questionnaire-type survey of rheumatic fever in Minnesota. They reported that of 44% of the doctors replying, there were 2,297 cases of acute rheumatic fever. In the previous year, only 148 cases of rheumatic fever were reported to the Minnesota Health Department.

Peckenschneider *et al*[3] in 1962 carried out a similar survey in Kansas and found a total of 742 cases of rheumatic fever. However, only 28% of the questionnaires were returned. Of the 742 cases of rheumatic fever, 401 were new cases. A statewide survey of medical doctors in Missouri was initiated by Van Leeuwen *et al*[4] in 1959. Questionnaires were sent to 3,600 members of the Missouri State Medical Association, regarding the number of rheumatic fever patients treated in their practice. Only 28% of the questionnaires were returned. Among 987 physicians in active practice who replied, 1,010 cases of rheumatic fever were reported, an average of 1.02 cases per physician.

The committee on rheumatic fever and congenital heart disease requested that the Division of Health and the Department of Community Health and Medical Practice of the University of Missouri, in cooperation with the Missouri Heart Association and the Missouri State Medical Association, conduct a study to determine the extent of rheumatic fever and rheumatic heart disease in Missouri. Such information would provide the data for the committee to give appropriate attention to the problem and to make whatever recommendations might be indicated in regard to needs for program planning within the State. The report contained herein is a one-year study of the magnitude of rheumatic fever and rheumatic heart disease in Missouri.

Materials and Methods

The Section of Chronic Diseases, Missouri Division of Health, and the Department of Community Health and Medical Practice of the University of Missouri, with assistance and advice from the Cardiac Study Committee of the Missouri State Medical Association and the Missouri Heart Association, designed the study in 1962. The Missouri Hospital Association and the Missouri Osteopathic Association were contacted to enlist their cooperation in the study. The study consisted of two phases.

The first phase involved sending a letter to each of the 194 hospitals in Missouri requesting the number of rheumatic fever and rheumatic heart disease cases which had been hospitalized from January 1, 1961 through January 1, 1962. Although the first phase of the study actually began in the latter part of 1962, it was decided to use the year 1961 since it was anticipated that all of the hospital medical record libraries would have completed the records for that period of time. Since this study was designed to be a study of prevalence, it was necessary to avoid duplication of patients. Therefore, the following additional information was requested regarding each

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Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect—Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults:
20 mg. (2 tsp. 5 times daily or
2 tablets 4 times daily)

**Based on 4 cc. per teaspoonful.*

Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

Report of a study on the prevalence of rheumatic fever and rheumatic heart disease in Missouri in 1961. Information obtained from both hospitals and private physicians indicates a rheumatic fever case rate of 28.8 per 100,000 persons and a rheumatic heart disease rate of 49.6 cases per 100,000 persons. The authors suggest that these figures are conservative but, even so, are large enough to indicate a definite public health problem.

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patient: The full name, the maiden name (if applicable), residence, age, and sex. The confidentiality of this information was emphasized. In an attempt to stress the importance of each inquiry, a personal letter accompanied each request and was sent to the administrator of each of the hospitals. After a reasonable length of time a second request was sent to those hospital administrators from whom we had not heard. If, following the second letter, no reply had been received, a third letter was sent inquiring if we could be of any assistance in obtaining the information, and in a few instances this was followed by a telephone call or personal visit or both. Just prior to the termination of the first phase of the study, the second phase was begun.

The second phase consisted of sending a personal letter and the request for information to every medical and osteopathic physician in Missouri in order to obtain the number of rheumatic fever and rheumatic heart disease cases who were seen during the same time period, but who were not hospitalized. Thus, letters were sent to 5,693 physicians. In the request to physicians, the procedure for avoiding duplication of cases was slightly modified from those used in the first phase of the study. Since the first phase was nearly complete at the time, the preliminary results were included in the letter to the physicians. Following a reasonable period of time, a second letter and a request were sent to those physicians from whom we had not heard in response to the first inquiry. It was the opinion of the study committee that requests should go to every physician in the State regardless of the type of practice, rather than limiting it to those physicians who would be most likely to see a patient with rheumatic fever or rheumatic heart disease. It was also the opinion of the authors that the less information requested, the better would be the response.

Results

A personal letter and a request for information was sent to each of the 194 hospitals in the State of Missouri. Of the 194 hospitals, the information requested was received from 192. This represents a 99% participation.

An individual request was sent to 5,693 physicians in Missouri of which there were 3,810 replies. There were 283 respondents who indicated that they were no longer in active practice, had moved from the State or that the physician in question was deceased. Therefore, the 283 was subtracted from both the numerator and denominator, giving a total of 3,527 responses out of a possible 5,410. This represents a response of 65.2%.

There was a total of 3,763 diagnosed cases of rheumatic fever and/or rheumatic heart disease reported in the study. A total period prevalence rate of 87 cases per 100,000 population was obtained for these diseases. These cases included both acute and recurrent cases of rheumatic fever as well as active and inactive cases of rheumatic heart disease. In addition to the 3,763 diagnosed cases, there was a total of 87 "suspicious cases." These cases were not included in computing period prevalence rates.

The distribution, by age and sex, of hospitalized and non-hospitalized cases of rheumatic fever reported in Missouri is shown in Table 1. Based on the 1960 population census of 4,319,813 and a total of 1,245 reported cases (acute and recurrent), the period prevalence rate of rheumatic fever in Missouri for 1961 was 28.8 cases per 100,000 persons. The highest prevalence rates (Table 2) were found in the age groups 5-9 and 10-14 which represents 58% of the total number of cases reported. More cases of rheumatic fever were apparently diagnosed on an outpatient basis than diagnosed as hospitalized cases. As shown in Table 2, there was little difference between males and females in the overall prevalence rates. The total rate per 100,000 population for males was 29.3 and for females 27.6. In 18 cases, sex was not indicated. In addition to the 1,245 diagnosed cases of rheumatic fever, 26 persons were designated as "suspicious cases."

The distribution of cases of rheumatic heart disease by age and sex is shown in Table 3. The

TABLE 1

DISTRIBUTION OF HOSPITALIZED AND NON-HOSPITALIZED CASES OF RHEUMATIC FEVER REPORTED IN MISSOURI, BY AGE AND SEX—1961

Age Group	*Number of Cases**			*Sex* MALE			FEMALE			NOT INDICATED		
	H	NH	T	H	NH	T	H	NH	T	H	NH	T
0-4	34	13	47	19	7	26	14	6	20	1	0	1
5-9	160	177	337	80	96	176	79	78	157	1	3	4
10-14	152	235	387	87	113	200	64	121	185	1	1	2
15-19	61	116	177	31	59	90	28	56	84	2	1	3
20-29	58	59	117	27	18	45	30	41	71	1	0	1
30-39	42	33	75	16	15	31	26	17	43	0	1	1
40-49	21	22	43	12	10	22	9	12	21	0	0	0
50-59	15	15	30	5	7	12	10	7	17	0	1	1
60 and over	7	6	13	0	4	4	7	1	8	0	1	1
Unknown	2	17	19	1	10	11	1	3	4	0	4	4
Total	552	693	1245**	278	339	617	268	342	610	6	12	18

* H—Hospitalized cases.
NH—Non-hospitalized cases.
T—Total.

** Plus 26 "suspicious" cases.
23—Hospitalized.
3—Non-hospitalized.

TABLE 2

PERIOD PREVALENCE RATES AMONG REPORTED HOSPITALIZED AND NON-HOSPITALIZED PATIENTS WITH RHEUMATIC FEVER, RHEUMATIC HEART DISEASE, AND CONCURRENT RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE, BY AGE AND SEX—MISSOURI, 1961

	Period Prevalence Rates Per 100,000 Population								
	RHEUMATIC FEVER			RHEUMATIC HEART			CONCURRENT RHEUMATIC FEVER AND HEART DISEASE		
Age Group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	11.0	8.8	10.1	0	0	0	2.5	0.9	1.7
5-9	82.0	75.7	79.9	12.6	11.1	12.3	16.8	14.0	15.6
10-14	104.3	99.7	102.6	39.1	28.0	33.9	25.0	23.7	24.4
15-19	58.3	54.6	57.4	36.3	46.1	41.5	22.7	35.1	29.2
20-29	18.4	27.7	23.4	29.9	56.2	43.5	7.0	12.5	9.8
30-39	11.8	15.3	13.8	47.1	69.5	60.5	4.2	3.6	3.9
40-49	8.7	7.7	8.2	57.5	81.5	70.7	3.2	3.0	3.0
50-59	5.2	6.9	6.3	75.2	99.9	91.1	3.9	2.0	2.9
60 and over	1.3	2.1	1.9	54.6	71.9	65.7	2.2	1.0	1.6
Total	29.3	27.6	28.8	40.5	55.8	49.6	8.5	8.7	8.7

overall period prevalence rate for this disease in 1961 was 49.6 cases per 100,000 population. This rate was based on the 1960 population of Missouri and a total of 2,143 cases reported by physicians and hospital administrators in 1961. More cases of rheumatic heart disease were seen in patients who were hospitalized than among those seen as outpatients. There were 44 additional patients in whom "suspicious" rheumatic heart disease was indicated. The highest prevalence of cases was found in the older age groups, especially in the age group 50-59 (Table 2). Since rheumatic heart disease is a complication of rheumatic fever, one might expect the disease to manifest itself later in life. Based on a unit population of 100,000 of those going to physicians and therefore included in this study, the prevalence rate for females was 55.8 as compared to 40.5 for males.

The distribution of concurrent cases of rheumatic fever and rheumatic heart disease, according to age and sex, is shown in Table 4. A total of 375 concurrent cases was reported for Missouri in 1961. Period prevalence rates by age and sex are shown in Table 2. The highest prevalence of cases is found in the age groups 10-14 and 15-19. There was little difference, however, in prevalence between males and females. In gen-

TABLE 3

Distribution of Hospitalized and Non-Hospitalized Cases of Rheumatic Heart Disease Reported in Missouri, by Age and Sex—1961

Age Group	Number of Cases*			Sex								
				MALE			FEMALE			NOT INDICATED		
	H	NH	T	H	NH	T	H	NH	T	H	NH	T
0-4	0	0	0	0	0	0	0	0	0	0	0	0
5-9	15	37	52	6	21	27	8	15	23	1	1	2
10-14	43	85	128	22	53	75	20	32	52	1	0	1
15-19	50	78	128	18	38	56	32	39	71	0	1	1
20-29	117	101	218	38	35	73	78	66	144	1	0	1
30-39	193	136	329	71	53	124	112	83	195	10	0	10
40-49	253	118	371	98	48	146	151	70	221	4	0	4
50-59	315	120	435	121	52	173	179	68	247	15	0	15
60 and over	364	96	460	141	33	174	212	62	274	11	1	12
Unknown	2	20	22	0	5	5	1	6	7	1	9	10
Total	1352	791	2143**	515	338	853	793	441	1234	44	12	56

* H—Hospitalized cases.
NH—Non-hospitalized cases.
T—Total.

** Plus 44 "suspicious" cases.
42—Hospitalized.
2—Non-hospitalized.

TABLE 4

Distribution of Hospitalized and Non-Hospitalized Cases of Concurrent Rheumatic Fever and Rheumatic Heart Disease Reported in Missouri, by Age and Sex—1961

Age Group	Number of Cases*			Sex								
				MALE			FEMALE			NOT INDICATED		
	H	NH	T	H	NH	T	H	NH	T	H	NH	T
0-4	1	7	8	1	5	6	0	2	2	0	0	0
5-9	11	55	66	5	31	36	5	24	29	1	0	1
10-14	10	82	92	5	43	48	5	39	44	0	0	0
15-19	3	87	90	2	33	35	1	53	54	0	1	1
20-29	4	45	49	1	16	17	3	29	32	0	0	0
30-39	3	18	21	3	8	11	0	10	10	0	0	0
40-49	0	16	16	0	8	8	0	8	8	0	0	0
50-59	1	13	14	0	9	9	1	4	5	0	0	0
60 and over	1	10	11	1	6	7	0	4	4	0	0	0
Unknown	0	8	8	0	3	3	0	4	4	0	1	1
Total	34	341	375**	18	162	180	15	177	192	1	2	3

* H—Hospitalized cases.
NH—Non-hospitalized cases.
T—Total.

** Plus 17 "suspicious" cases.
15—Hospitalized.
2—Non-hospitalized.

eral, the prevalence of cases by age and sex followed a similar trend as that for rheumatic fever alone. There were in addition, 17 concurrent cases designated as "suspicious."

Discussion

Should one ask the individual physician if rheumatic fever constitutes much of a problem, the answer is most likely to be "no." Since the advent of antibiotics, it might be expected that the total number of cases of rheumatic fever within the State might be rather small. It is somewhat surprising, therefore, that in Missouri within one year there was a total of 1,245 cases of rheumatic fever reported in the study. If we include the rheumatic heart disease cases during this same time period, the figure jumps to an unexpected 3,763 cases.

Among those persons with rheumatic heart disease, 84% were over the age of 20 years. Only 22% of those with rheumatic fever were over 20 years of age. This might be expected in view of the fact that rheumatic heart disease is the sequela, while rheumatic fever is an acute or episodic disease with or without heart disease. Since a period prevalence includes both old and new cases of a particular disease, the higher prevalence of rheumatic heart disease probably represents cases in whom the disease manifested itself several years prior to the present study period. On the other hand, the reported cases of rheumatic fever more nearly represent the *incidence* of the disease (Table 2).

The overall period prevalence of 87.1 per 100,000 reported hospitalized and non-hospitalized cases of rheumatic fever and/or rheumatic heart disease in Missouri probably is an underestimate of the actual number of cases in the State. Although an unusually large response was obtained from hospital administrators (99%), a lesser response (65%) was obtained from medical and osteopathic physicians. Assuming that cases were seen at the same rate by the 35% non-respondent physicians and the 1% non-respondent hospital administrators, there would be a total estimated number of 4,766 (110.3 per 100,000) cases of rheumatic fever and/or rheumatic heart disease in Missouri, if there were 100% reporting. However, it should be recognized that unlike the study conducted by Marienfeld *et al*, in which the prevalence of cases was based on the number of students *examined*, the rate obtained in this study was based entirely on *reported* cases. Since there are very likely an unknown number of rheumatic fever and rheumatic heart disease cases which are either so mild as to never come to the attention of a physician or which are incorrectly diagnosed, the impact of these unrecognized cases to the total case load cannot be evaluated. These facts are implied in Marienfeld's study. Furthermore, the busy physician, unless he files his records cross-referenced by diagnosis, may rely to a great extent on memory alone regarding cases seen. Therefore, the total number of cases reported in this study does not necessarily represent every case in the State, but rather those who were attended by and reported by physicians in this study.

Nevertheless, in the opinion of the authors, the period prevalence rates for these two diseases are of sufficient magnitude to justify the statement that these diseases are still a public health problem.

SUMMARY

A study of the prevalence of rheumatic fever and rheumatic heart disease in Missouri in the year 1961 was conducted by the Section of Chronic Diseases, Missouri Division of Health, and the Department of Community Health and Medical Practice, University of Missouri, at the request of the committee on rheumatic fever and congenital heart disease of the Missouri Heart Association. Cooperating in the study were the Missouri State Medical Association, Missouri Hospital Association, Missouri Osteopathic Association, and the Missouri Heart Association.

The study was designed in two phases. The first phase was the reporting by Missouri hospitals of cases of rheumatic fever and rheumatic heart disease who were hospitalized during 1961.

The second phase was the reporting of rheumatic fever and rheumatic heart disease which were seen by physicians during the same time period, but who were not hospitalized. There was 99% participation by the hospitals and 65.2% participation by the physicians. There was a total of 1,245 cases of rheumatic fever reported which represents a period prevalence rate of rheumatic fever in Missouri in 1961 of 28.8 cases per 100,000 persons. There were an additional 26 reported cases which were designated as "suspicious" cases of rheumatic fever. There was a total of 2,143 cases of rheumatic heart disease reported, thus the overall period reported prevalence in 1961 for rheumatic heart disease was 49.6 cases per 100,000 persons. There were 44 additional cases of rheumatic heart disease reported as "suspicious."

There was reported a total of 375 concurrent cases of rheumatic fever and rheumatic heart disease. The period prevalence rate for reported concurrent cases is 8.7 per 100,000 population.

These totals do not represent all of the cases, but only those seen and reported by physicians and hospitals cooperating in the study. Therefore, the above rates are conservative. Considering rheumatic fever and rheumatic heart disease together, there was a total of 3,763 diagnosed cases. This gives a total period prevalence rate of 87 cases per 100,000 population. As might be expected, 84% of those with rheumatic heart disease were over 20 years of age, whereas only 22% of those with rheumatic fever alone were over 20 years of age. Recognizing that this is probably far fewer than the true rate, it is the opinion of the authors that the period prevalence rates for these two diseases are still of sufficient magnitude to justify the statement that these diseases remain a public health problem.

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ROBERT PAINE, M.D., ***St. Louis***

The Nervous System and the Heart

Part III

CENTRAL NEURAL APPARATUS

The mechanism of the control of heart beat through the central nervous system is obscure in many details especially as these relate to the origin of these controls in the brain stem. A brief consideration of these important factors should be reviewed. Existence of a central regulatory apparatus was demonstrated through the inducton of hypotension by cervical spinal cord section by Claude Bernard.[110] Since then the lateral horn cells (sympathetic) of the spinal cord have been found to have little if any spontaneous activity other than a possible responsiveness to change in oxygen and carbon dioxide tension.[111]

Spontaneous activity of sympathetic fibers has appeared to reside in the cerebral medulla where continuous discharge activity goes on in normal chemical environment even after elimination of all afferent nerve pathways.[112-114] These neurons lie in a diffuse network extending within the reticular formation from the pons to the obex.[112] Their regulation of sympathetic activity has been established by observations of the effects of successive transverse sections through the medulla and by exploration of this "vasomotor" area with stimulating electrodes. These studies have mapped a predominantly pressor area surrounding a more medially located depressor area which widens laterally caudally.[112, 115-122] While pressor area excitation elicits an augmented sympathetic tone, stimulation in the depressor region inhibits its activity.[117-119, 123]

The third of four installments of an exhaustive review of the physiologic relations of the nervous system and the heart. In the two preceding issues, the author covered such subjects as: Behavior of the Heart in Absence of Extrinsic Innervation; Effects of Sympathetic Stimulation; and Sensing Apparatus of the Heart and Great Vessels. References and illustrations are numbered consecutively through all four installments to provide unity and cohesion for the work.

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The efferent pathways from this medullary center pass along the border between the dorsolateral and ventrolateral funiculus in the spinal cord with partial crossing. Whether or not there are depressor fibers in this final common path has not been determined.[120, 124-126]

The hypothalamus has been the object of considerable interest[127-130] since early attempts at electrical stimulation there produced marked elevation of blood pressure and hyperpnea, along with pupillary dilatation and bladder constriction.[131] Multiple sites of stimulation with the Horsley-Clarke stereotaxic apparatus have provoked a variety of vascular activity: anterior hypothalamic excitation has been followed by bradycardia, hypertension, S-T elevation and T inversion; lateral stimulation has caused, in addition to hypertension, atrio-ventricular dissociation and ventricular premature contractions; posterolateral activation has been followed by hypertension, A-V nodal rhythm, aberrant intra-ventricular conduction and ventricular premature contractions.[132]

In the supra optic area stimulation has precipitated increased (50%-200%) venous outflow from skeletal muscles without change in arterial blood pressure. Simultaneous records of blood flow in skin or intestinal vessels on the other hand have shown evidence of vasoconstriction.[133] Stereotaxic exploration showed the discreet dilator area is quite small and is lost by movement of the electrode one or two millimeters. The muscular vasodilator efferents are apparently cholinergic[134] since atropine has been found to block their action while adrenolytic agents were without effect.[135] Caudal pathways from the dilator area pass lateral to the vasomotor center in the medulla probably without synapse in this area.[136]

Within the anterior hypothalamus, a heat-sensitive area has been defined by the changes induced in cutaneous circulation when the temperature in this area is raised. Thermal excitation in this area inhibits vasoconstrictor tone in the skin.[137] The response is specifically related to temperature for electrical stimulation of this "center" produces vasoconstriction in the skin.[138]

Multiple stimulation studies have emphasized the intermingling of pressor and depressor areas of minute size in the hypothalamus. Electrocardiographic records taken during stimulation have provided further evidence of the multiplicity of response obtained by hypothalamic irritation. Tachycardia, bradycardia, tall T waves, ventricular tachycardia, A-V dissociation, S-T elevation, T inversion, U waves, multifocal ventricular premature contractions, all have been seen.[139]

sor response of sham rage.[128] These reflexes appear to be relayed in the hypothalamus.

Cerebral cortical stimulation, especially in the motor and premotor area, has produced marked cutaneous, splanchnic and renal vasoconstriction while concurrently vasodilatation of skeletal muscular beds has occurred[129, 130] (Figs. 9-10). Specific cortical vasodilatory areas (skeletal) have been defined with efferents passing to the hypothalamus.[92] The majority of the vascular efferents from the motor and premotor cortex follow somatomotor tracts with partial crossover so that vascular responses are bilaterally distributed.[142, 143]

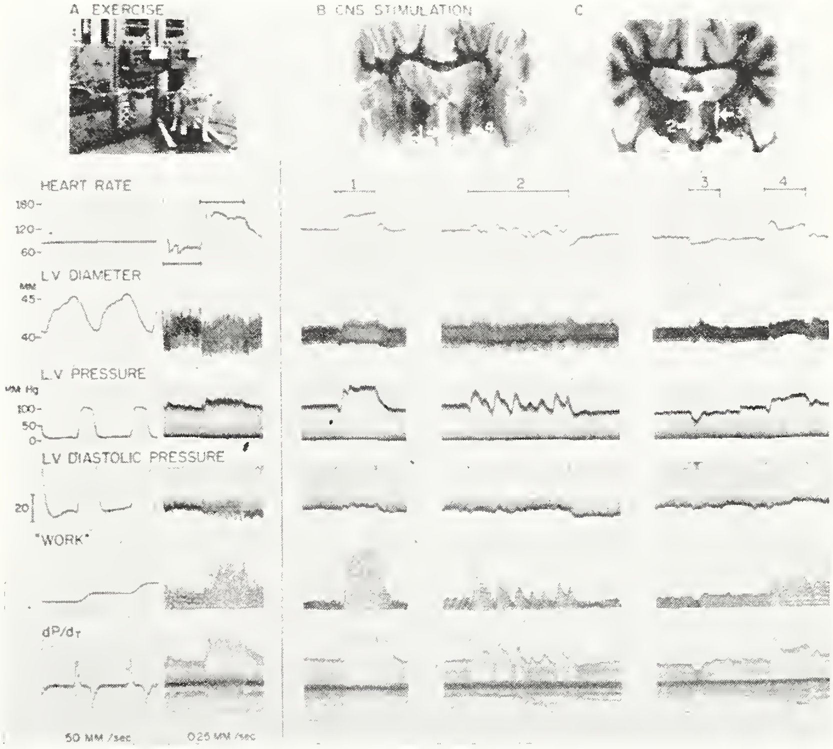

Fig. 9 Hypothalamic stimulation and its variable effects upon heart rate, size, pressure and work.[37]

The mechanical response of the heart to hypothalamic activity has been found to include in addition to variation in heart rate, increased left ventricular size (diameter), increased left ventricular systolic and diastolic pressure[37] and increased left ventricular work and power.[140] Excitation in other hypothalamic areas has on the other hand diminished ventricular pressure[140] (Fig. 9).

From the anterior cerebellum, inhibitory effects on vasoconstrictor tone have been recorded with suppression of baroreceptor and chemoreceptor reflexes.[127] Cerebellar irritation has been found both to provoke and to suppress the pres-

In the orbital cortex, exploration has revealed both pressor and depressor areas with efferents running into the hypothalamus.[144-146] Similarly, temporal cortical response has been both pressor and depressor.[145] The descending pathways of these reflexes, however, have little hypothalamic connection, but instead pass through the temporo-pontine tracts and extend dorsolaterally into the brain stem.[147] From the cingulate gyrus, stimulation has elicited vasoconstrictor responses mediated by fibers which join the efferents from the temporal cortex.[147, 148] From the Insula, depressor reactions transmitted via the hypothalamus have been described.[145]

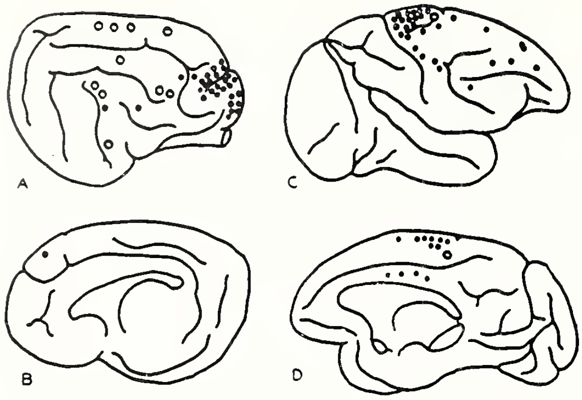

Fig. 10 Cortical stimulation. Solid dots indicate areas of pressor response; open dots, depressor reaction.[141]

Neural Control of Adrenal Medullary Secretion

Effects of stimulation of the hypothalamus upon adrenal medullary secretion have been studied by determination of adrenal venous catecholamine content. While under resting conditions, adrenal venous blood has been found to contain .0052-0.3 μg/Kilo/min. of epinephrine and 0.048-0.6 μg/Kilo/min. of norepinephrine. Hypothalamic probing has provoked secretory rates of both substances as high as 5.0-2.7 μg/Kilo/min.[149] Striking variations in the composition of this secretion have followed movement of the electrode into various locations within the hypothalamus. Discreet areas have been mapped from which the adrenal response has been especially rich in epinephrine, while other foci have provoked norepinephrine release (Fig. 11). It is of interest that medullary cells productive of each type of catecholamine can be distinguished by histologic techniques.[147]

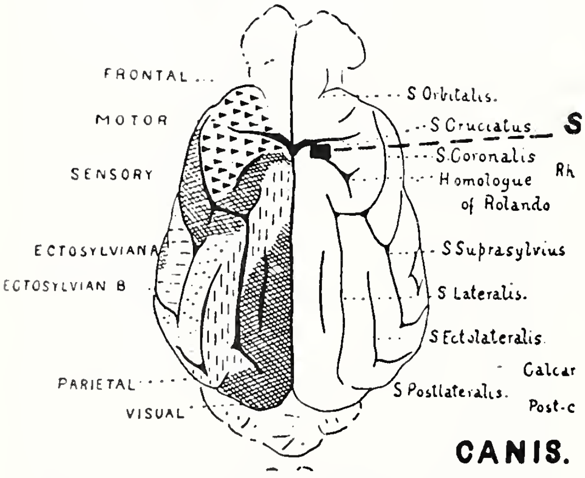

Fig. 11 Cortical area from which muscular vasodilation response elicited (S).[133]

Neural Participation in Hemodynamics of Exercise and Fright

Radiographic studies as early as 1902 have documented the fact that heart size diminishes during exercise.[150] In more recent years observations of cardiac behavior during exercise have defined the normal circulatory response by many parameters. In animals whose intracardiac and intra-aortic blood pressures have been recorded by appropriate catheters and whose cardiac dimensions have been measured by mechanical gauges or by a sonar type of device (an emitter attached to one side of the heart and a receiving crystal applied to the opposite wall permitting calculation of cardiac diameter by determination of time of transmission), the effects of exercise upon systemic and intraventricular pressure, heart size and rate, rate of ejection, cardiac power and stroke work have been determined (Fig. 12). The normal unanesthetized animal, upon treadmill exercise[37] has been found to develop tachycardia, decrease in cardiac systolic and diastolic diameter, increased left ventricular systolic pressure with little or no change in diastolic left ventricular pressure. In most instances, stroke volume has changed little while heart rate and the rate of ejection and peak systolic power have increased markedly.

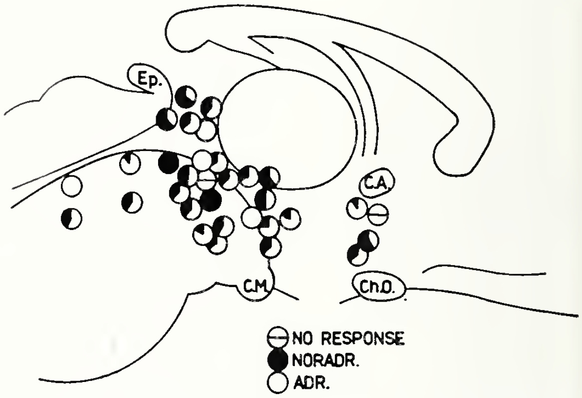

Fig. 12 Adrenal medullary response to hypothalamic stimulation. (Noradn: norepinephrine response. Adr: epinephrine response.)[149]

Since the possibility exists that augmentation of cardiac work on exercise might be the result of increased venous return engendered by skeletal muscular action, these animals have been submitted to rapid intravenous infusion of blood. Tachycardia, as in exercise, has resulted; but left ventricular systolic and diastolic size have *increased* as did left ventricular pressure throughout the cardiac cycle. Also, unlike the exercise rate response, tachycardia during infusion has not been persistent.

To exclude the possible role of circulating epinephrine in the dynamics of exercise, animals after similar preparations have been given epinephrine by infusion. They developed a transient tachycardia followed by bradycardia; ventricular diastolic pressure and size increased, while ventricular systolic pressure rise was considerably more gradual than that occurring in exercise. It has been noted also that the cardiac response to exercise began with such promptness as to preclude the mediation of a circulating substance. Although these observations clearly have distinguished between the exercise and the epinephrine (and norepinephrine) response, the presence of increased secretion of these amines in vigorous exertion has been demonstrated.[151]

Since tachycardia appears to be an integral part of cardiac response to muscular effort, the possibility that other cardiac alterations are secondary to rapid heart action has been studied by recording on tape the heart beat during treadmill exercise. Later, the identical heart rate and rhythm has been induced in the same animal at rest by "playing back" the tape into an auricular electrode. Cardiac diameter has been found to diminish but the blood pressure and cardiac work and power effects seen in exercise have not appeared. When, however, epinephrine or norepinephrine were infused during "replay tachycardia," the resting animals' hearts have performed as on exercise except for a more gradual development of left ventricular systolic hypertension.

Significantly, stimulation of the cardiac sympathetic nerve supply in these dogs has induced a decrease in heart diameter, a marked elevation in systolic and diastolic pressure within the ventricle and the aorta and a prompt tachycardia.[37] Stimulation within the hypothalamus in some areas has elicited rate, output and work changes as in exercise, but generally heart size has not decreased and left ventricular diastolic pressure has increased. From other areas, as noted previously, the response has been depressor and has resembled exercise in no way. *While neurogenic stimuli have not precisely reduplicated the circulatory dynamics during exertion, the striking similarity of these results strongly suggests that the cardiac response on exertion is initiated by the central nervous system and mediated by the sympathetic apparatus.*

Measurement of coronary blood flow in excitement and exercise has been done in large unanesthetized dogs by the application of electromagnetic flow meters upon the left circumflex coronary artery and the aorta. During excitement, as well as in exercise, heart rate and systemic blood pressure have risen and a striking increase in coronary flow, both during systole and in diastole, has occurred (Fig. 13). The ratio of flow to pressure in diastole has increased also, indicating vasodilation in the coronary circulation. In view of the significant tachycardia, the demonstration of increased coronary flow/

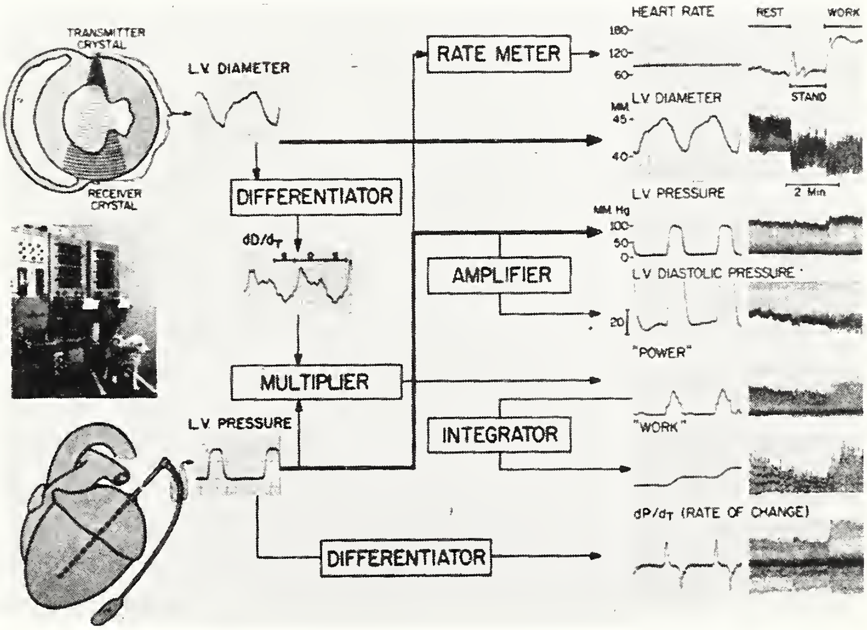

Fig. 13 Techniques of recording heart size, rate, pressure, power and work during exercise.[37]

beat assumes added significance.[55] The resemblance of the response of the coronary circulating during exercise and excitement to that produced by sympathetic stimulation leaves little doubt that the reaction may be mediated by this neural mechanism. Whether dilatation results from metabolic effects of neurocardiac stimulation in exercise or whether true vasodilator fibers as in skeletal muscle are responsible is as yet undetermined.

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Introversion and Depression in Mothers of Cerebral Palsied Children

Existing literature indicates that mothers of cerebral palsied children are likely to undergo personality changes leading to feelings of inferiority, introversion and depression. The author reviews this literature and then reports on personality tests which have been conducted with mothers who have participated in cerebral palsy education programs. He concludes that such programs have shown definite evidence of helping mothers of afflicted children to maintain normal personality patterns. Doctor Collins is from the Department of Education, St. Louis University.

In the normal course of events there are few pleasures in life that equal the arrival of a baby into the home. Murphy[1] has indicated it is the baby that transforms a marriage into a family. The question to be considered in this paper is concerned with the feelings of the mother when the anticipated joy becomes a traumatic experience with far-reaching effects. More specifically, will the confinements inherent in having a cerebral palsied child lead to personality changes in the mother?

In our American culture the mother is the parent most concerned and affected by the child. She has the responsibilities of daily care and meeting the infant's life needs. In the case of cerebral palsied children, the care and needs are considerably different and emotionally more exhausting than those of a normal infant. The period of reaching independence is prolonged and oftentimes the cerebral palsied child never becomes completely independent in the activities of daily living. Foster[2] spoke of this as the "continuous care" problem of this disability group. Cerebral palsy is a condition due to cerebral damage, occurring before birth, during the birth process, or later in life, which prevents or delays passage through the normal stages of life. As a result, unless the condition is extremely mild, it would appear that the mother's personality will be adversely affected.

The assistance given to parents to help them understand the needs of their cerebral palsied children was discussed by Barsch.[3] He indicated that often the mother requires assistance in explaining her child's condition to her friends and neighbors. Eggers[4] said that when a mother has a cerebral palsied child, the world becomes almost wholly composed of the child and herself.

The entire problem is one of a family harassed by economic, mental, and physical difficulties. The difficulty of adjustment for the parents is not a result of the medical reality of cortical damage in the child but a result of what Jordan[5] called the "phenomenology of disability."

Zuk[6] stated that these parents asked what they had done to have a handicapped child. He found that Catholic mothers were more acceptant of their handicapped children than were Protestant mothers. Zuk[7, 8] also wrote that the difference between normal parent-child attitudes and parent-handicapped-child attitudes is in the intensity of the feelings. The original focus of parental anger is the handicapped child. In our culture there is a very high value placed on children, but the same culture then devalues the handicapped. He[9] said this ambivalent attitude is at the core of the crisis in family adjustment to the handicapped child. Zuk also indicated that the parents of handicapped children come to feel guilty about their children because they have previously been angry with them and have even held destructive thoughts. The parents project anger towards others or themselves; or their anger is transformed into guilt.

Farber[10] indicated that a severely defective child completely disrupts the family cycle. When the child is a boy, he has an increasingly disruptive influence on the family. Holt[11] confirmed that a retarded child actually places limits on the number of children desired by a family. This limitation was usually the result of the reality problems involved in the 24-hour-a-day care required by the child. Margolis and Wortis[12] indicated that the parents in their study were troubled, anxious and disturbed to a large extent as a result of these reality problems. In half of their families, the entire family life was overshadowed by the cerebral palsied child. They also reported that the older the child, the more disruptive an influence he is.

Boles,[13] in his study of the mothers' attitudes of 60 cerebral palsied children and a control group of mothers of 60 nonhandicapped children, reported that the experimental group mothers did not have greater anxiety. These mothers of the cerebral palsied children did not have significantly greater guilt feelings; nor were they more rejecting than the mothers in the control group. The mothers of the cerebral palsied children did have more marital conflicts. They were not found to be more significantly socially withdrawn than were the controls.

McClelland, Rindlisbacher, and de Charms[14] reported that Protestant and Jewish families expect independence in their children at an earlier age than do Irish or Italian Catholic families. This finding has implications for the personality development of the child as well as for the mother when the child is not meeting her expectations. Zuk has also reported that when mothers are the informant on the Vineland Social Maturity Scale, they tend to increase the social age of their handicapped child.[7] These parents seemingly have a need to distort their children's status. When the child is physically handicapped there is not as much autistic distortion.

Klebanoff,[15] in comparing the parental attitudes of mothers of schizophrenic, brain-injured and normal children, did not find a significant difference between the experimental groups. There was, however, a significant "pathological" type response between the brain-injured and schizophrenic groups and the normal group. Goodstein[16] did not find a significant MMPI difference between parents of cleft palate children and parents of physically normal children. He and Dahlstrom[17] did not find significant MMPI differences in the attitudes of parents of stuttering children and parents of nonstuttering children.

Kanner[18] reported that his parents of handicapped children had a complete inability to face reality. There was a tendency for them to always disguise the reality of the situation. Smith,[19] in writing about the emotional factors revealed in the intake process at an institution, reported that the theme of the "death wish" appeared somewhere in the majority of the interviews.

Hurley[20] reported that mothers of more intelligent groups of children tend to be more accepting and less demanding in their child rearing attitudes than mothers of less intelligent children. Saenger[21] did not find a relationship between the degree of physical handicap and parental acceptanee of the child. Leichman[22] reported that the acceptance or rejection of the handicapped child was a function of the mother's own high or low self-esteem. He did not find a significant difference between Catholic or Protestant mothers and acceptance of the handicapped child. Farber, Jenne, and Toigo[23] indicated the family crisis created by a defective child is the result of the falling away of the common values of the family.

The review of the literature indicates the strain that parents, especially the mothers, are under as the result of having a handicapped child. These mothers cannot struggle with the fear and the reality problems for very long without adversely affecting their own personality structure. When the severely defective child remains in the home, there is a summation effect at work. The child's presence has a growing adverse effect upon the siblings as well as the parents. The older sister especially undergoes emotional strain as a result of assuming a part of the mother's role in caring for the child. Jordan[5] reported that the handicapped child assumes the role of the youngest child when in fact he is the oldest chronologically.

In some instances it appears that the mother's faith in her religion will have a stabilizing influence on her personality adjustment. The data in the literature are not clear-cut and definitive in this area.

The Hypothesis

Having a cerebral palsied child in the home imposes limitations on the mother's field of experience. There is a limit placed on her social movement creating what amounts to a self-imposed social withdrawal. As a result it would appear that mothers of cerebral palsied children tend to be withdrawn and introverted as opposed to outgoing-extroverted type personalities.

The hypotheses tested state that mothers of cerebral palsied children will have significantly more feelings of inferiority and depression than a group of controls. Mothers of cerebral palsied children are here operationally defined as the mothers of children attending the Educational Program of the United Cerebral Palsy Association or the Program at Cardinal Glennon Hospital, both located in Saint Louis. The constructs of inferiority and depression are operationally defined as the scores obtained on the *S*, *T*, and *D* factors of the Guilford-Zimmerman STDCR

Personality Scale. This scale consists of 175 items yielding a rating in Social Introversion-Extraversion, Thinking Introversion-Extraversion, Depression, Cycloid Disposition, and Rathymia.

The Guilford-Zimmerman STDCR Scale was given to the mothers of the children by the administrators of the programs. They were asked to complete the forms and return them to the centers. The control group of mothers was obtained by using mothers from Catholic and public elementary schools in basically middle-class neighborhoods as a gross control of socioeconomic factors.

The experimental group contained data on 14 Protestant mothers and 23 Catholic mothers. A control group was obtained by random selection from the pool of control mothers.

CONCLUSIONS

When Catholic mothers are compared with Protestant mothers of cerebral palsied children, the data indicate that Catholic mothers are significantly different in terms of the Social Introversion-Extraversion variable. Table 1 shows the *F* value for this variable. This *F* value of 5.33 is significant at the .05 level of confidence. When Catholic mothers of cerebral palsied children are compared with Protestant mothers of cerebral palsied children, the Catholic mothers score significantly different. This would indicate that the Catholic mother of a cerebral palsied child is more apt to be socially introverted than is the Protestant mother. This makes a nice generalization and does support the hypothesis. However, on closer analysis of the data and when controls are in effect for the number of children, it is found that this difference is a function of the number of children in the family. It was found that on the basis of Catholic versus Protestant mothers when controlled for number of children there was no difference found between the groups. Reasonably enough, the more children a mother has the more apt she is to be socially introverted.

TABLE 1

SOCIAL EXTRAVERSION-INTROVERSION VARIABLE
CATHOLIC MOTHERS VS. PROTESTANT MOTHERS
OF CEREBRAL PALSIED CHILDREN

Source of Variation	*Sum of Squares*	*df*	*Mean Square*	*F*
SS_b	426.810	1	426.81	5.33*
SS_w	2802.272	35	80.06	
SS_t	3229.082			

* Significant at the .05 level.

When the Thinking Extraversion-Introversion variable is analyzed there is no difference between the Catholic and Protestant mother of cerebral palsied children, as can be seen from Table 2. The within group variance is greater than the between group variance and there is not a significant difference between the two groups on the Thinking Extraversion-Introversion variable.

TABLE 2

THINKING EXTRAVERSION-INTROVERSION VARIABLE
CATHOLIC MOTHERS VS. PROTESTANT MOTHERS
OF CEREBRAL PALSIED CHILDREN

Source of Variation	*Sum of Squares*	*df*	*Mean Square*	*F*
SS_b	43.390	1	43.390	.322*
SS_w	4563.800	35	130.394	
SS_t	4607.190			

* The *F* is not significant.

When the Depression variable is considered, again it is found that the groups do not differ significantly. Table 3 shows the *F* value for this variable. It is seen again in this case that the within variance is greater than the between variance. The two groups do not differ significantly on this variable.

TABLE 3

DEPRESSION VARIABLE
CATHOLIC MOTHERS VS. PROTESTANT MOTHERS
OF CEREBRAL PALSIED CHILDREN

Source of Variation	*Sum of Squares*	*df*	*Mean Square*	*F*
SS_b	46.211	1	46.211	.397*
SS_w	4070.871	35	116.31	
SS_t	4117.082			

* The *F* value is not significant.

When the data are analyzed using the total experimental groups and comparing this group with the total control groups, no significant differences were found for any of the variables. Table 4 presents the *F* values for the variables of Social and Thinking Extraversion-Introversion and for the Depression variable. The data indicate with this population of mothers of cerebral

TABLE 4

TOTAL CONTROL GROUP VS. TOTAL EXPERIMENTAL GROUP

Variable	*Source of Variation*	*Sum of Squares*	*df*	*Mean Square*	*F*
Social Extraversion-Intraversion	SS_b	146.809	1	146.809	1.416
	SS_w	10258.809	99	103.624	
	SS_t	10405.367			
Thinking Extraversion-Introversion	SS_b	10.494	1	10.494	.121
	SS_w	8574.299	99	86.609	
	SS_t	8584.793			
Depression	SS_b	56.098	1	56.098	.449
	SS_w	12356.140	99	124.809	
	SS_t	12412.238			

palsied children and this control group that mothers of cerebral palsied children are not significantly more socially introverted, thinking introverted, nor are they more given to depression. In each instance it is impossible to reject the null hypotheses, so therefore the hypotheses as stated must be rejected.

SUMMARY

The hypotheses tested were formulated on the basis of the previously reported literature. The findings of this study are considerably different in that it was found that mothers of cerebral palsied children do not differ significantly from mothers of normal children in terms of the operationally defined variables of Social Introversion, Thinking Introversion, and Depression.

It can now be hypothesized that these findings differ from previous reports as a function of the support these mothers receive from the involvement in the cerebral palsy programs.

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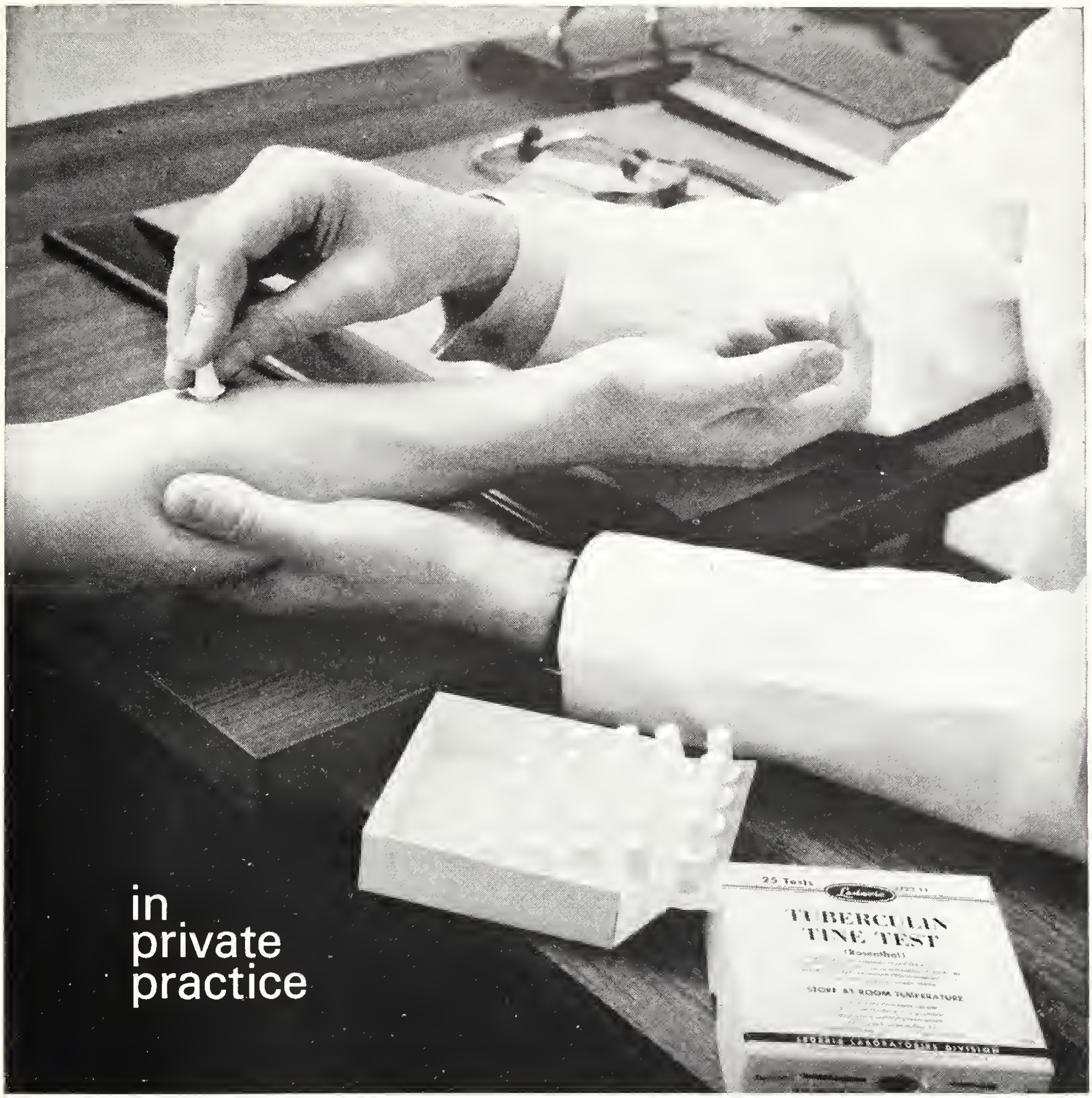
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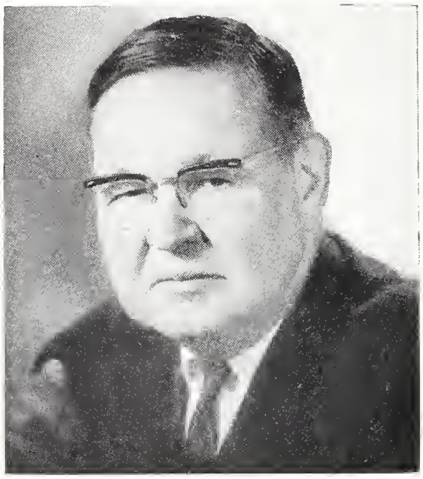

Paul R. Whitener, M.D.

President's Message

The Supreme Court has ruled that the various states must readjust their legislative bodies so that the number of Representatives and Senators within those bodies reflect the "one-man-one-vote" concept. At this writing, efforts to reapportion the House of Representatives of the Missouri General Assembly have bogged down in political controversy, but it is obvious that the task eventually will be accomplished one way or another.

When this comes about, our larger centers of population will have much larger representation in the state legislature. It can be assumed that the medical societies in those centers will then have an even greater responsibility for counseling and advising legislators from their home areas. These and other societies should remember, however, that there is a definite dividing line between legislative activity and political activity. Medical societies may legally engage in the former but must leave the latter to such organizations as MMPAC and AMPAC.

I urge all component societies of the Missouri State Medical Association to prepare now to take an active part in the legislative activities of the profession. In those areas where there are enough physician-members special committees should be organized. They should be charged with getting acquainted with legislators, potential legislators and political leaders. These persons should be made fully aware that the medical profession stands ready to provide them with facts and figures, suggestions and recommendations which will assist them in their consideration of medical and health legislation.

Let's be sure that the voice of medicine is heard . . . loud and clear . . . in the legislative chambers of this state and this nation.

Paul R. Whitener M.D.

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Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function.** Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

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Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately *25 mg. per pound* of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

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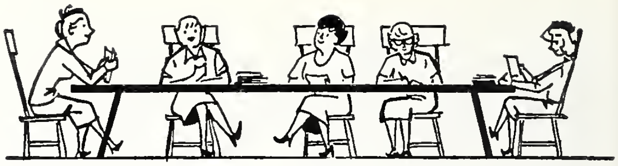
Woman's Auxiliary



Hello again! I dare not say, "Warm Greetings to you all!" That goes without saying as summer sends its last hot rays; but the leaves are beginning to tumble down, the locusts are singing and the cool nights are a portent that autumn is on its way!

Mrs. R. W. Bohnsack

"Procrastination is the thief of time." How well aware of this I am this morning with our youngest beginning his last year of high school, our middle one beginning her junior year in college and our two grandchildren starting kindergarten and first grade! It makes me realize that I am not getting younger, time is hurrying by, and there is so much to be done and so little time in which to do it! I am reminded that it is time to take up our Auxiliary activities again with vim, vigor and pride! Not that mine ever ceased this summer, except for the week our daughter and three children visited us. Then I found it necessary to put away the typewriter!

While she was here, she, Carol and I were invited to a lovely luncheon by the Saline County Auxiliary in the home of Pat Reid at Marshall. We felt right at home because Pat's husband and mine were in medical school together! Two of our former Past-Presidents, Gladys Haynes and Helen McBurney, were among those present.

By the time you read this I will also have visited Cape Girardeau, Perry-Ste. Genevieve and Mineral Area Auxiliaries, God willing! I will also have attended a joint tea and meeting at Warrensburg in the home of Mary Lou Lederer with the Johnson and Lafayette-Ray County Auxiliaries.

October 10-13 will find Wilda Stacey and me in Chicago attending the National Fall Conference presided over by our own Betty Sutter, now our National President. The Tuesday afternoon session will cover Program Resources and, specifically, how to arrange Guest Day meetings. The two auxiliaries which were selected to present ideas were Camden County, New Jersey, which has attracted as many as 1,400 persons to such meetings and St. Louis County which has had as many as 500. Venus Schattyn is writing a summary of the latter which I will read. We are proud that Missouri is represented in this area.

Our National Regional Workshop will follow on October 13-14. AMA-ERF, Community Service, Health Careers, Mental Health, Legislation and Membership Chairmen are also invited to this workshop with the AMA underwriting the expenses. This is a marvelous opportunity for our chairmen and I am hoping they will all be able to attend.

I will barely return in time to get my "duds" together for our own Fall Conference, our HOOTENANNY FOR HEALTH, to be held at the Holiday Inn at Poplar Bluff, October 20-21. I hope all reservations are in by now and that we'll have a record-breaking crowd! The response has been wonderful, so far as the program is concerned, and the hostess auxiliaries of the Ninth and Tenth Districts, are doing a fine job with their plans to make your stay in Poplar Bluff enjoyable. Leave your hats and gloves at home, but don't forget to bring your voices and your instruments! Prepare to have fun, but also prepare to be inspired with good ideas for your year in the Auxiliary.

I understand by the grapevine that quite a few of the doctors are also coming for a few days of well-deserved rest. This should pep up our dinner and luncheon considerably! Among those to be present are Dr. Whitener and Dr. Guhleman, who will most certainly inspire us in our program. A reminder—POPLAR BLUFF IS ON DAYLIGHT SAVINGS TIME UNTIL NOVEMBER 1! Time yourselves accordingly!

November 1-4 are the dates for the Southern Convention in Houston where our own Ruth Kelling will preside as President. I am honored that she has asked me to give the Response to the Greetings and am looking forward to the meeting with anticipation.

And now, until October 20, watch out for our school children, fasten your own seat-belts, drive carefully and God bless you all!

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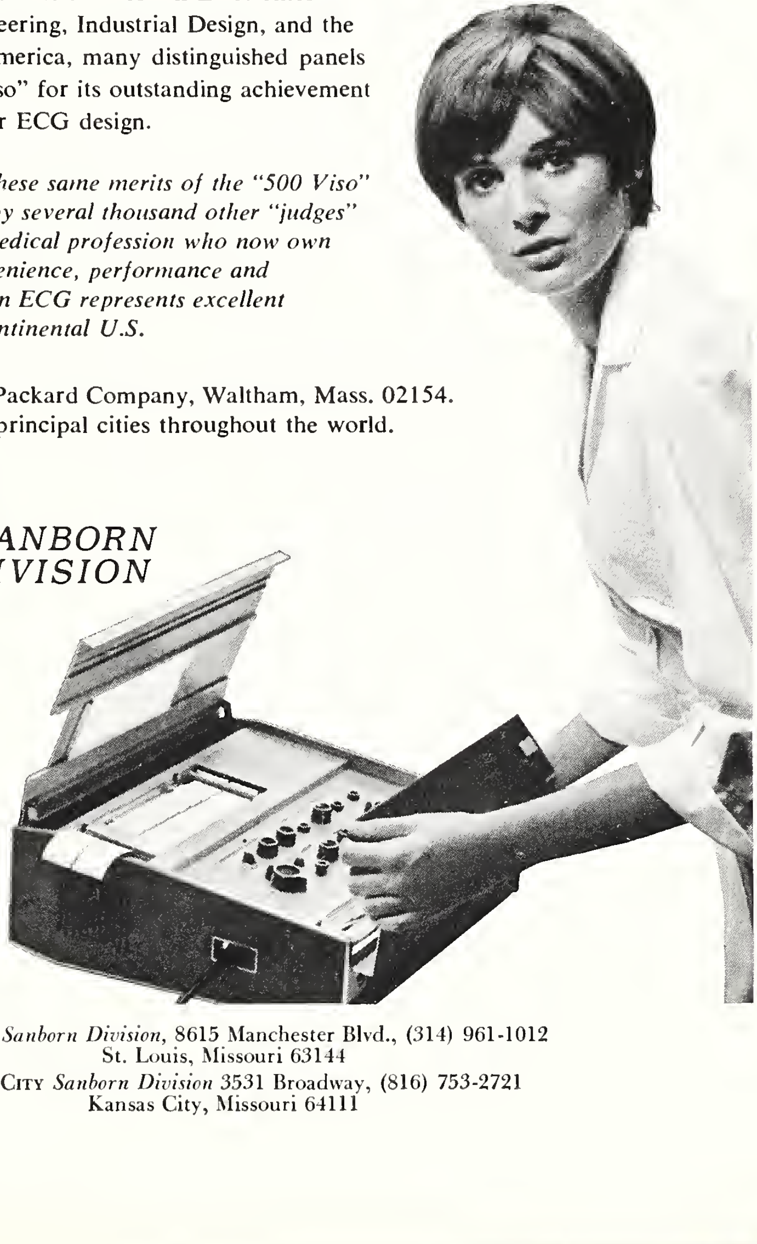

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EDITORIALS

1965 CLINICAL CONVENTION

The American physician is well aware that he must keep abreast of new findings in therapy and research to be able to provide the best possible care for his patients.

He must know about new drugs and their uses and possible side effects. He must know about new techniques of surgery. He must know of the promising leads toward solution of now baffling physical ills. And he must know of the sometimes small but often important new successes in finding better ways to treat the already treatable diseases.

There's no argument about the premise that the physician must keep learning. The problem is how. With the average American physician now working a 58-hour week, and many putting in hours far above the average, how can the physician find the time to study and keep abreast?

One of the most compact methods of checking up on new developments is to attend the annual clinical convention of the American Medical Association. The program of this convention is designed primarily for the man in practice. The speakers will read papers that bring to the man in practice the latest findings of others in his area.

This year the clinical convention will be held in my home state of Pennsylvania, Nov. 28-Dec. 1, in Philadelphia.

The Philadelphia meeting offers an excellent scientific program. Topics of wide interest will be discussed by outstanding teachers. All of the various sessions and workshops will contribute to the continuing education of the practicing physician.

Particularly noteworthy are the postgraduate courses in gynecology and obstetrics and in cardiovascular therapeutics, consisting of two series of comprehensive lectures.

Other sessions will be devoted to timely subjects, followed by question-and-answer or discussion periods. Fireside conferences and breakfast roundtables will provide further time for informal discussion.

It promises to be a stimulating four days, worthy of the busy physician's time. I urge every physician to take advantage of the educational opportunity represented by the clinical convention.

JAMES Z. APPEL, M.D.
President
American Medical Association

TIMES DO CHANGE . . . OR DO THEY?

It may be well to devote a few minutes to the inquiry, whether the progress and improvement of medical science are appreciated by the public mind. Does the medical profession stand higher now than in times past, when its claims were far inferior? Is it gaining on the confidence and affections of the people, in proportion as it accumulates the means of accomplishing its holy mission?

The answer to these inquiries is in no degree flattering to professional pride. It cannot be denied that the ancient glories of our craft are departed—that its palmy days are ambered with the past. The solemn and magisterial air, and the huge wigs of our illustrious predecessors, though backed by a gold-headed cane and a precious roll of parchment "To all men, Greeting," no longer attract the homage of the crowd to the deified Priest of Esculapius. Old things are done away and all things become new. Unhallowed hands have stripped the ancient idol of all mysterious adornment, all fictitious covering, and exposed it to the microscopic eyes of an irreverent and scrutinizing generation.

I repeat, our profession has declined in public estimation within the present century, whilst it has been advancing in its claims and merits beyond all precedent. Mankind appear to have but little more respect for it now than in the days when medical science was but a jumble of superstition and empiricism, and when its practitioners were banished from Rome as public pests. To make such an acknowledgment is disagreeable; but if the contemplation of the picture should lead to an effort to correct the evil and bring about a better state of things, the confession may prove salutary.

A lament by a 20th Century American physician concerning his public "image"? It could well be, but it isn't. The foregoing is an excerpt from a lecture delivered by Henry Gibbons, M.D. in the year of 1849!

TO ERR IS HUMAN BUT TO RE-ERR IS INEXCUSABLE

The subsequent year, prior to the actuation of the Medicare bill, will demand certain organizational changes by the physicians in order to fulfill the hospital obligations requested by H.E.W. The manner in which these responsibilities are assumed and the means of implementation may well be the most important challenge to confront the practicing physician in many a decade.

If we accept our part in the planning, jealously protecting those prerogatives that we must retain in our control, then we can look toward this change assured that what medicine has considered most sacrosanct (the doctor to patient relationship) will not be altered.

On the other hand, if we relinquish our responsibility, failing to man the essential committees, i.e. 1. Utilization Committee, 2. Review Committee for Nursing Homes, etc., reluctant to cooperate with the inevitable changes, then we sacrifice our chance to charter our own destiny. It would be foolhardy to conclude that indifference will eliminate the bill or its implications.

It may be human to err, but repetition may be fatal to the freedom of medicine if the hospitals obtain a unilateral hold in medicine by our default.

SIDNEY RUBIN, M.D.
Associate Editor
Greater Kansas City Medical Bulletin
September 11, 1965

EVER THE TWAIN MUST MEET

During the past week we received a letter from the Missouri State Medical Association which has been posted on the bulletin board of the library. It deals with the Committee on Medicine and Religion which met during the MSMA Annual Session. I hope that every physician will take time-out to read this letter. A manual was delivered at the same time which contained a program guide for the Committee on Medicine and Religion for state and county medical societies. It states that there are four phases in the total health of man, namely, physical, spiritual, mental and social.

Medical leaders recognize that man cannot be separated into parts for care and treatment of illness, that man is a whole being. His health is affected by physical, spiritual, mental and social factors. The goal of American medicine to attain the best of health conditions for all Americans envisions a degree of rapport with the clergy which will assure the best care and treatment for the individual patient and the highest possible degree of consideration for the needs of the patient's family. The faith of the individual patient is a vital factor in total health. It is a matter of whether we agree or disagree or accept his particular type or degree of faith. The patient has faith, and we must treat him within the realm of that faith.

Throughout all of America there are many individuals in all walks of life who are deeply concerned with the necessity of maintaining the total health of man. It is widely recognized that a weakness in any one of the four factors of health (physical, spiritual, mental or social) can and does militate toward illness in one or all three of the other factors. Decisions are demanded for both physicians and clergymen today in areas which in time past were not recognized. Because of dramatic advances in medicine, modern drugs and counseling procedures, members of the two professions often find themselves consulting with the patient or his family in regard to decisions involving life and death.

The confidence that the average person places in his clergyman and physician requires that the two consult with each other whenever necessary. From their collective judgement will come the means for providing the most effective care and treatment of the patient as a whole man.

I notice that the Greene County Medical Society Bulletin contains an article written by a local minister. It was quite interesting to read and gave us food for thought. The sole purpose of the Department of Medicine and Religion of the AMA is to create the proper climate for communication between the physician and the clergyman, a climate which will lead to the most effective care and treatment of the patient. To achieve this purpose, the Department is working through physicians to establish contacts with the clergy and is directing studies in areas where there is continuing correlation involving medicine and religion.

ALBERT R. MADDOX, M.D., President
Pettis County Medical Society Bulletin
June, 1965

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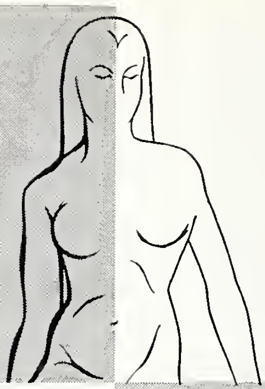

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References: 1. Goldsmith, J. W.: Minn. Med. (Feb.) 1957. 2. Groskloss, H. H., Clancy, C. L., Healey, E. F., McCann, W. J., Maloney, F. D., Loritz, A. F.: Clinical Medicine (Sept.) 1955. 3. Codling, J. W., Lowden, R. J.: Northwest Med. (March) 1958. 4. Bethea, R. C.: International Record of Med. (May) 1960. 5. Lenz, W., Second International Conference on Congenital Malformations, N. Y., N. Y., (July) 1963.

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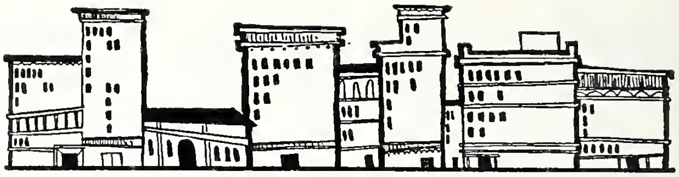


UNIVERSITY OF MISSOURI

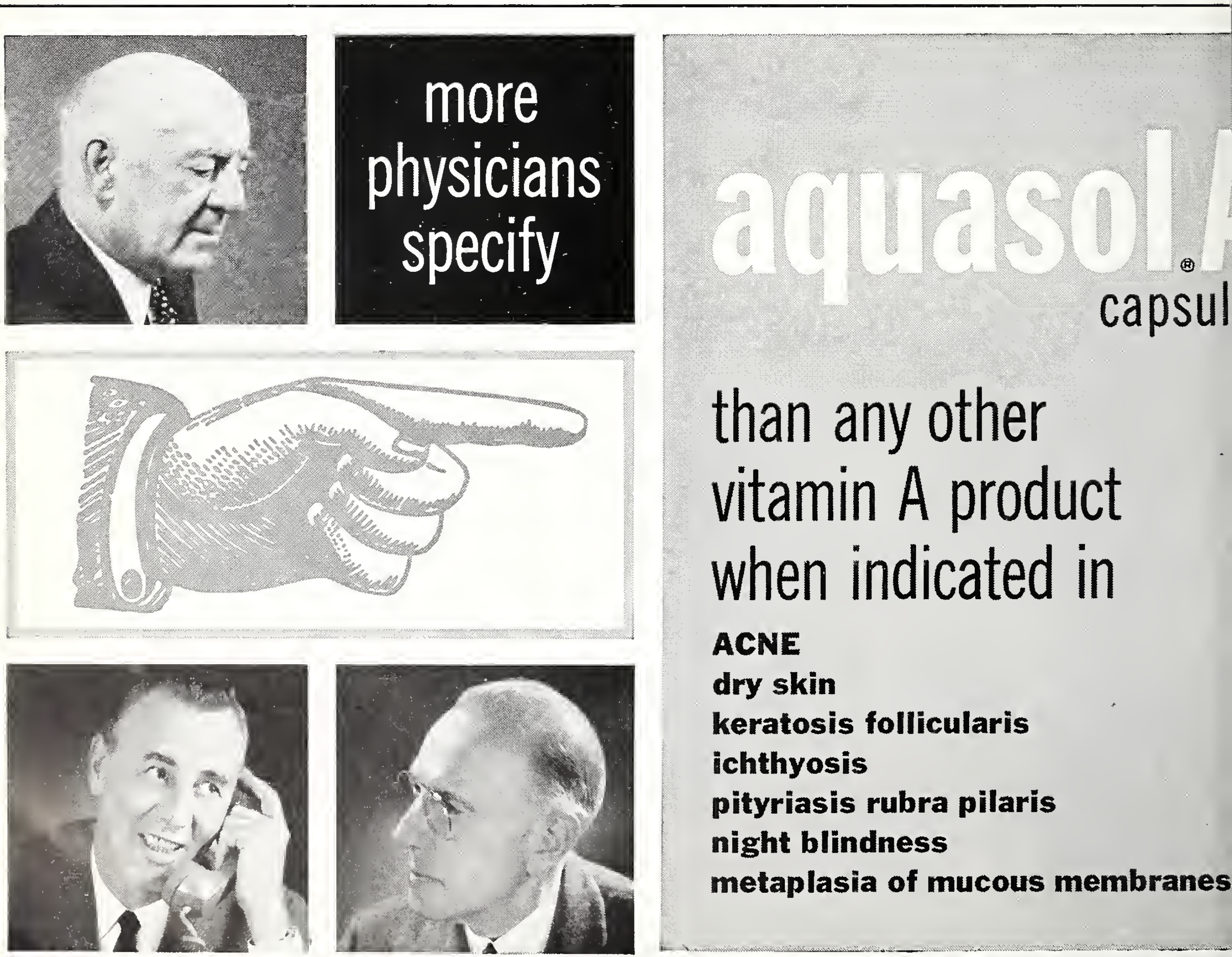
Faculties of the University of Missouri and the University of Nebraska will join in presenting the annual M.D. program at University Medical Center in Columbia, October 29-30. The scientific sessions will end in time for participants to attend the Tiger-Cornhusker game in nearby Memorial Stadium.

Activities include a social hour Friday evening in the Faculty-Alumni Lounge in the Memorial Union followed by dinner in the Main Ballroom at the Union. Reunions for the Missouri classes of 1940 and 1960 will be held prior to the dinner. A buffet luncheon will be served at the Medical Center on Saturday preceding the game.

Forms for advance registration and for room and ticket reservations are being mailed to all physicians in the state. Since this is homecoming week-end at the University, these forms should be returned to the Office of Continuing Education at the Medical Center as quickly as possible to insure reservations.

Program participants from Nebraska will include Dr. John R. Jones, director of Anesthesiology, "Pre-Operative Care of the Patient with Pulmonary Disease"; Dr. Paul E. Hodgson, professor of Surgery, "Functional Monitoring of Resuscitation"; Dr. John F. Foley, coordinator of the Chemotherapy Program, "Cancer Chemotherapy"; Dr. Perry Rigby, assistant professor of Internal Medicine, "Anemias Associated with Malignancy"; and Dr. Thaddaeus P. Krush, professor in the Department of Neurology and Psychiatry, "Psychiatry and General Practice."

Participants from the Missouri faculty will include Dr. Richardson Noback, associate dean and director of the Kansas City General Hospital and Medical Center, "Interfaces—Medical Care and Community Responsibility"; Dr. Norman Asel, associate professor of Dermatology, "The Management of Common Eczematous Skin Dis-



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eases"; and Dr. E. Frank Ellis, director of the Out-Patient and Emergency Services, Kansas City General Hospital and Medical Center, "Home Care Programs."

The Clinical Pathological Conference on Saturday morning will be presented by Dr. Clarence A. McWhorter, professor and chairman of the Department of Pathology at Nebraska, and Dr. C. Thorpe Ray, professor and chairman of the Department of Internal Medicine at Missouri.

WASHINGTON UNIVERSITY

Dr. Carl A. Moyer, head of the department of surgery and Bixby professor of surgery at Washington University School of Medicine, has resigned. The 57-year-old physician had headed the department of surgery for the past 14 years. He is nationally known in his field, and early this year won new recognition when he and Dr. William W. Monafo reported their work with a new silver nitrate treatment for severe burn cases. Dr. Moyer is a native of Michigan and a graduate of the University of Michigan School of Medicine. He reportedly is considering an affiliation with a small college in that state.

Dr. Henry G. Schwartz, professor of neurological surgery, has been named acting head of the department of surgery, succeeding Dr. Moyer.

Dr. P. Roy Vagelos will become head of the Department of Biochemistry next July 1. He will succeed Dr. Carl F. Cori, who will retire from the chairmanship at that time. Dr. Vagelos, 36, has been at the National Heart Institute, National Institutes of Health, since 1956 except for one year he spent at the Pasteur Institute in Paris. His research concerns fatty acid and complex lipid biosynthesis. He has also done work on the regulation of fat metabolism and the structure and function of proteins.

Dr. Cori, who has been a member of the Washington University faculty since 1931 and head of the Biochemistry Department since 1947, will continue his research at the School of Medicine. He is Distinguished Service Professor of Biochemistry and was awarded the Nobel Prize in 1947 jointly with his late wife, Dr. Gerty Cori, for work on the conversion in the body of glycogen into glucose.

Kidney research at the School of Medicine will be expanded within the next five years as a result of a $841,000 grant for a five-year period awarded by the U. S. Public Health Service. Under study will be such areas as transplantation, chronic kidney dialysis and the basic research which makes possible advances in treatment and understanding of kidney disease.

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The Department of Neurology and Psychiatry in cooperation with the St. Louis Academy of General Practice is offering 12 two-hour sessions in "Psychiatry in Medical Practice." The classes will meet on Tuesday nights from 7:30 to 9:30, starting October 19, 1965.

The faculty for this special series will be composed of outstanding members of the Department. Subjects to be covered include: doctor-patient relationship, general principles of psychiatry, adolescence, neurotic problems, sexual problems, alcoholism and drug addiction, psychotic reactions and geriatric problems. The course is designed to be of value to general practitioners, internists, obstetricians, pediatricians and other non-psychiatric physicians. It has been approved for 24 AAGP accredited hours. Fee for the course is $25.00.

Dr. Thomas S. Thale, assistant clinical professor of psychiatry, has been appointed Clinical Director of the David P. Wohl Memorial Mental Health Institute. Dr. Thale, formerly in the private practice of psychiatry in St. Louis, has been a member of the St. Louis University medical faculty from 1950 to the present time. In his new position, he will be responsible for the direction of the Institute's clinical program both for patients admitted for hospital treatment and those who visit the Institute's outpatient facilities. He will coordinate the clinical program with the various teaching functions of the Department of Psychiatry which are conducted at the Institute.

In Memoriam

Lewis, Albert G., M.D., Platte City: a graduate of Jefferson Medical College, 1945; member of Platte County Medical Society; aged 45.

Grogan, Frank M., M.D., St. Louis: a graduate of St. Louis University, 1925; member of St. Louis Medical Society; aged 73; died July 30, 1965.

McIntyre, Emery J., M.D., Carthage: a graduate of the University of Illinois, 1923; member of Jasper County Medical Society; aged 72; died August 9, 1965.

Riordan, Lawrence M., M.D., St. Louis: a graduate of St. Louis University, 1919; member of St. Louis Medical Society; aged 74; died August 14, 1965.

Hall, Andy Jr., M.D., University City: a graduate of Washington University, 1926; member of St. Louis Medical Society; aged 67; died August 24, 1965.

Egley, Loren E., M.D., St. Louis: a graduate of St. Louis University, 1928; member of St. Louis Medical Society; aged 66; died August 26, 1965.

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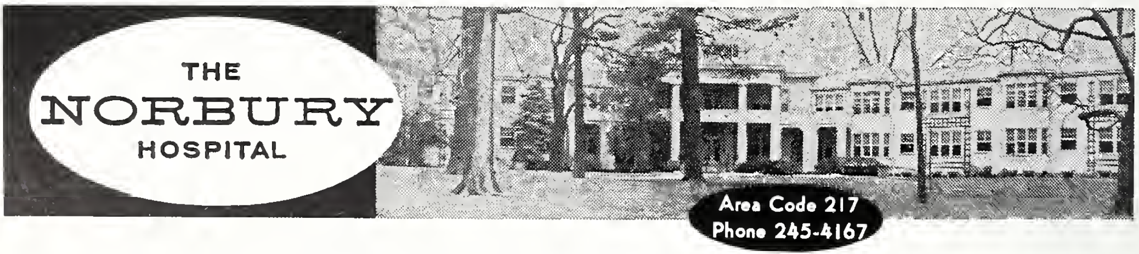

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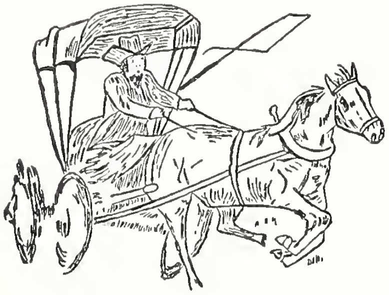

FORTY YEARS AGO

Tryparsamide as a therapeutic agent in neurosyphilis has attracted much attention during the past three years. The chemical is the sodium salt of N-phenylglycineamide-p-arsenic acid, which was first synthesized by Jacob and Heidelberger in 1915. This work was carried out in the Rockefeller Institute for Medical Research.

On September 16 Governor Baker requested all the members of the State Board of Health to resign in order that he might be free to appoint a new Board. All the members acceded to his request. On September 20 the Governor announced that he had appointed the following members of the Board: Dr. Wm. A. Clark, Jefferson City; Dr. Elmer T. McGaugh, Richmond; Dr. Willard Bartlett, St. Louis; and Dr. Herbert A. Breyfogle, Kansas City. The following members of the former Board were reappointed: Dr. James Stewart, Jefferson City; Dr. Homer L. Kerr, Crane; Dr. Herman S. Gove, Linn.

All physicians are familiar with the brilliant work done by Dr. Evarts A. Graham, professor of surgery, Washington University Medical School, Dr. Glover H. Copher, instructor in surgery, and Dr. Warren H. Cole, resident surgeon at Barnes Hospital, in developing a method for making cholecystography effective in the diagnosis of gallstones and gallbladder conditions by means of X-ray. In recognition of this achievement the American Roentgen Ray Society has awarded the Leonard Prize to the discoverers, and the American Radiological Society has awarded them the Gold Medal offered by that body for distinguished work in roentgen ray research.

At the Annual meeting of the House of Delegates held at Kansas City, May 4-6, 1925, the amount of the annual dues to the State Association was increased from $5 to $8 per member. The question of raising money by voluntary contribution to meet legislative expenses was thoroughly discussed by the delegates and it was generally acknowledged that such a method was futile. Other State Medical Associations have long ago abandoned the $5 dues and increased the amount to $10 and even more in several instances!

TWENTY-FIVE YEARS AGO

Evidence that high blood pressure is the result of obstruction of the arteries of a kidney is presented in *The Journal of the American Medical Association* by Nelson W. Barker, M.D., and Waltman Walters, M.D., Rochester, Minn. They cite five cases in which the blood pressure returned to normal after the affected kidney was removed.

Dr. Hugh L. Dwyer has been appointed Director of Health of Kansas City.

TEN YEARS AGO

The *Caruthersville Argus* carries a feature article on George Wilson Phipps, M.D., Caruthersville, giving the story of his life and his 56 years of practice, 53 of them in the same office.

The 500,000 attendance mark was reached and passed at the 1955 Missouri State Fair held in Sedalia. The weather was dry and "hot enough" throughout. The Pettis County Medical Society, as another of its many free public service projects, manned a first aid station-hospital on the fair grounds around the clock during the nine day fair. Members of the Society were scheduled on four hour shifts. Plenty of blisters, headaches, cuts and other nondescript ailments were the order of the day.

Dr. J. Albert Key, noted orthopedic surgeon and professor emeritus of clinical orthopedic surgery, died August 6 after suffering a heart attack at his country home at Wesco, Mo., near Steelville. Dr. Key was chief of orthopedic surgery at Barnes and affiliated hospitals and a former president of the American Academy of Orthopedic Surgeons.

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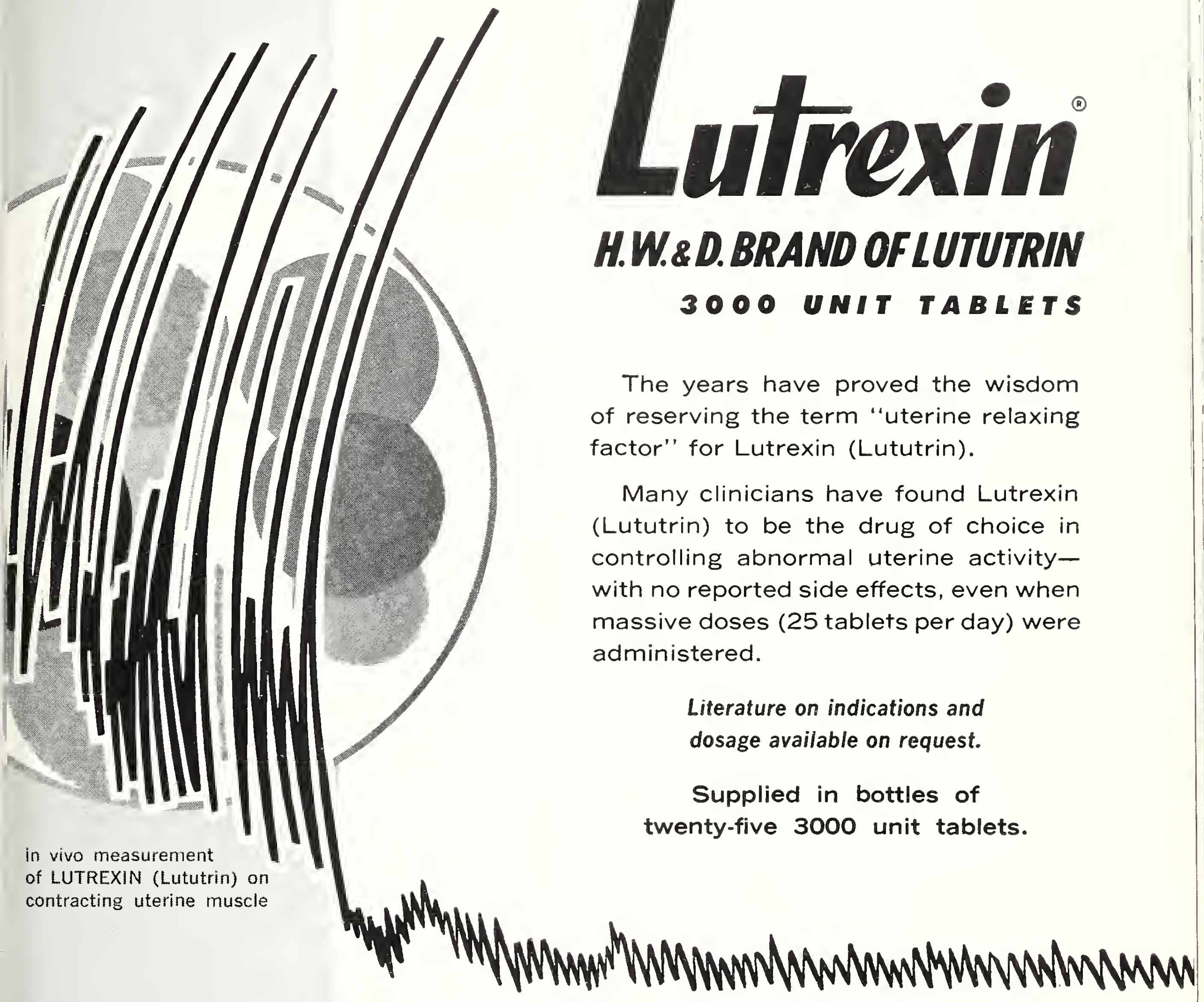

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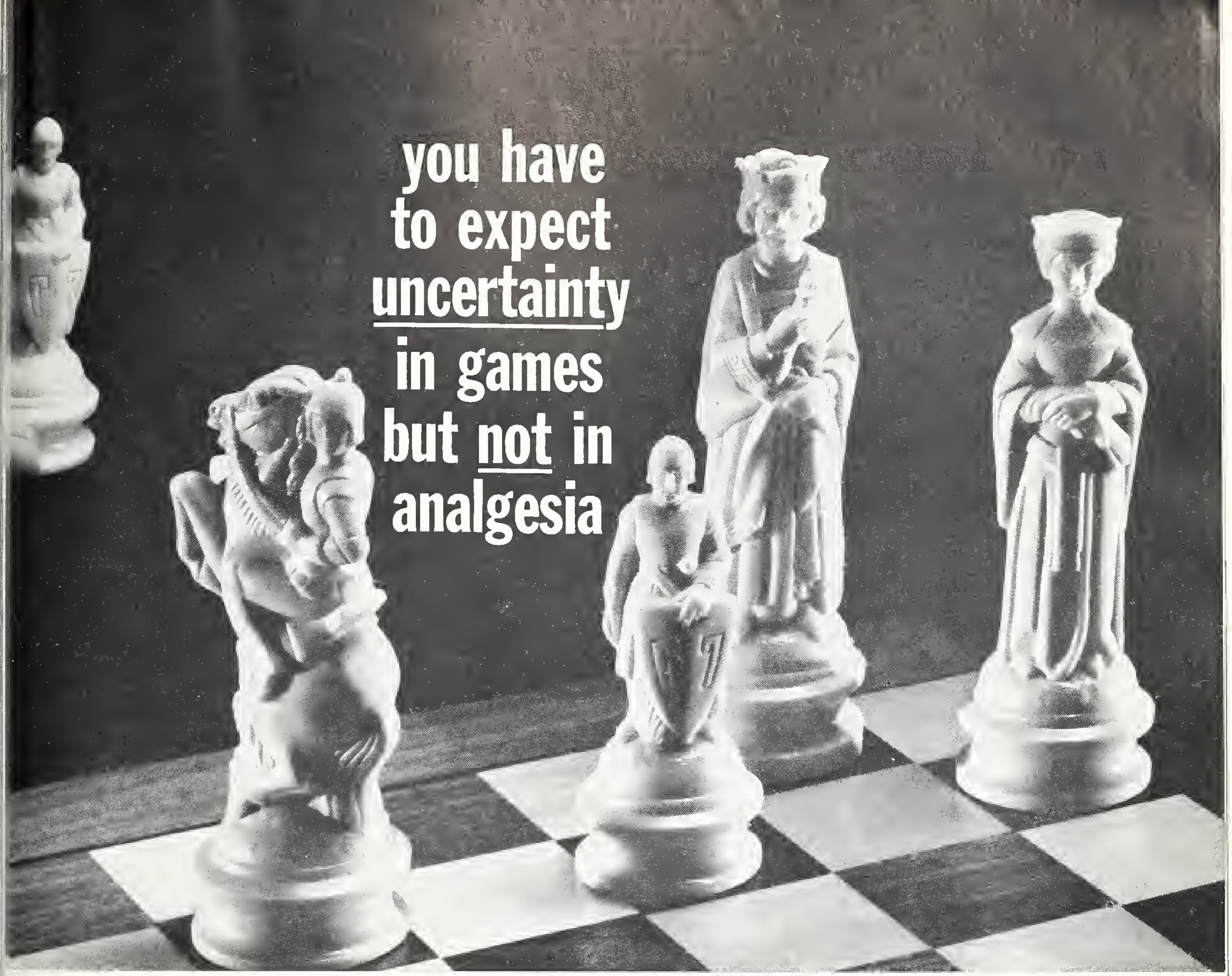

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Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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AMA Formalizes Position on 'Medicare'

The House of Delegates of the AMA has approved a general statement of policies and positions which the organization and individual members can use as guidelines in their relations with the federal government's new "medicare" program. The position paper was approved by the special session of the House which met in Chicago, October 2 and 3.

Forty-three resolutions dealing with various aspects of Public Law 89-97 ("medicare") were introduced and all were referred to a reference committee headed by B. E. Montgomery, M.D., of Harrisburg, Illinois. The committee hearing lasted for seven and one-half hours with 125 witnesses making statements or comments of up to five minutes in length.

Among the official Delegates and member-physicians who were on hand for the entire session were MSMA's four representatives, Drs. Durward G. Hall, J. Loren Washburn, A. W. Neilson and Richard H. Kiene.

The reference committee spent most of the night reviewing testimony and preparing its report which was offered to the House on the second day of the session. Several amendments were proposed from the floor, but none of those which were adopted changed the basic intent or thrust of the reference committee's document.

Here are the highlights of the position paper as finally approved by the House:

1. An individual physician acting independently and not in concert with others can lawfully refuse to accept any person as a patient who is a beneficiary under the program ("medicare"), or he may elect to treat such persons.
2. The physician's freedom in selecting patients may be circumscribed by certain considerations involving medical ethics. A review of ethical standards and their application is included in the policy statement.
3. The AMA will oppose any program of dictation, interference or coercion, whether direct or indirect, affecting the freedom of choice of the physician to determine for himself the extent and manner of participation or the financial arrangement under which he provides medical care to patients under PL 89-97.
4. The AMA will continue to work with government agencies to help formulate and revise regulations for implementing PL 89-97, and every physician is urged to assist in this effort.
5. The Board of Trustees and its Advisory and Consultant Committees were commended for their efforts in attempting to prevent, control and/or guide the implementation of "medicare" and other health care legislation.
6. Current practices and customary procedures with respect to certification for hospital admission and care shall be continued under PL 89-97.
7. Local option is recommended in selection of the fiscal or administrative agent for "medicare," although Blue Shield appears to be a logical candidate for this role in many areas.
8. In the event of a dispute between physicians and carriers with respect to reasonable, customary or usual fees, it is recommended that the appropriate local medical society participate in resolving such disputes.
9. Hospital utilization review committees shall be composed of practicing physicians.
10. The AMA is instructed to inform all members of the options in payment for services which are available to them under the "medicare" law.
11. The AMA will actively and forcefully oppose efforts by federal or state governmental agencies to force physicians to sign non-discrimination pledges.
12. The service fees of hospital-based specialists should not be merged with hospital charges but should be established, billed and collected in the same manner as are fees of other physicians. The AMA will continue to fight against inclusion of any physician in the hospital service provisions of any health legislation.
13. Nothing emanating from the special session of the House shall be construed as approval of the "medicare" law or acceptance of its philosophy.

The House also instructed the Executive Office of AMA to supply member-physicians with as much information as is feasible on PL 89-97 and the responsibilities and rights of the individual physician under the law.

During the special session, several efforts were made to put the AMA on record as opposing "participation" in PL 89-97 and refusing to cooperate with government agencies in implementing the new law. In each instance, the effort was defeated by substantial margins.

As the reference committee completed its report, Delegates of the House gave it a standing ovation.

medical melange

Notes of interest from Here . . . . and Ther

Contrary to a still persistent popular belief, diabetes may show itself long before the classic picture of too much glucose, or sugar, in the blood or urine develops. The so-called "complications"—diseases of the eye, kidney, blood vessels, skin and feet, abnormalities of pregnancy and other symptoms—may all be warning signs of diabetes, according to Dr. Max Ellenberg, associate attending physician, Mt. Sinai Hospital, New York City. In fact, says Dr. Ellenberg in an article in "Diabetes—Research, Detection, Therapy," a newsletter published by The Upjohn Company, these early symptoms are so ubiquitous that "all doctors in all fields of medicine have the challenge and opportunity to recognize diabetes in its earliest stages. The clinician need not, and indeed must not, await the overt symptomatology of uncontrolled diabetes before making the diagnosis."

Pfizer Laboratories Division, Chas. Pfizer & Co., Inc., has announced that it
making available Sabin oral polio vaccine in trivalent form. The trivalent vacci
combines in a single dose Types I, II, and III of polio virus vaccine. The minimu
recommended dose for trivalent oral vaccine is two doses six to eight wee
apart. However, Pfizer pointed out, The American Academy of Pediatrics recor
mends that trivalent vaccines be administered in five doses between the age
two months and entry into school. The first company to be licensed in the Unit
States to distribute the Sabin oral polio vaccine in 1961, Pfizer has supplied mo
than 150,000,000 doses of monovalent vaccine for community wide vaccinati
programs in over 1,000 communities. The trivalent vaccine, it is believed, w
find greatest use in offices of individual physicians.

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A study of more than 350,000 cancer deaths in New York State over the pa
25 years is being made by the New York State Department of Health in cooper
tion with the U. S. Public Health Service, to seek clues as to whether pesticid
may have been causative or contributing factors. The study is the first su
large-scale effort to search systematically for changes in cancer rates that mig
have resulted from the increased use of pesticides during the past 20 years. T
investigation will consist of a survey of records of the New York Cancer Regist
dating from 1940 and the statistical plotting of cancer deaths according to typ
of malignancy, age, sex, occupation and geographic location.

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enylbutazone has not replaced physio- rapy, x-ray treatment, or local injections nydrocortisone in the more chronic condi- ns, but it may advantageously be com- ed with these measures.

ntraindications
ema, danger of cardiac decompensation; tory or symptoms of peptic ulcer; renal, patic or cardiac damage; history of drug ergy; history of blood dyscrasia. Because he increased possibility of toxic reac- ns, the drug should not be given when the ient is senile, or when other potent chem- erapeutic agents are given concurrently. ge doses of Butazolidin alka are con- ndicated in patients with glaucoma.

cautions
fore prescribing, the physician should ain a detailed history and perform a com- te physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning
If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Adverse Reactions
The most common adverse reactions are nausea, edema and drug rash. The drug may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

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Initially, give 400 mg. daily (one capsule q.i.d), reducing this, if possible, when a favorable therapeutic effect has been obtained. If after one week there has been no response, discontinue the drug. Butazolidin alka contains antacids and an antispasmodic to minimize gastric upset.

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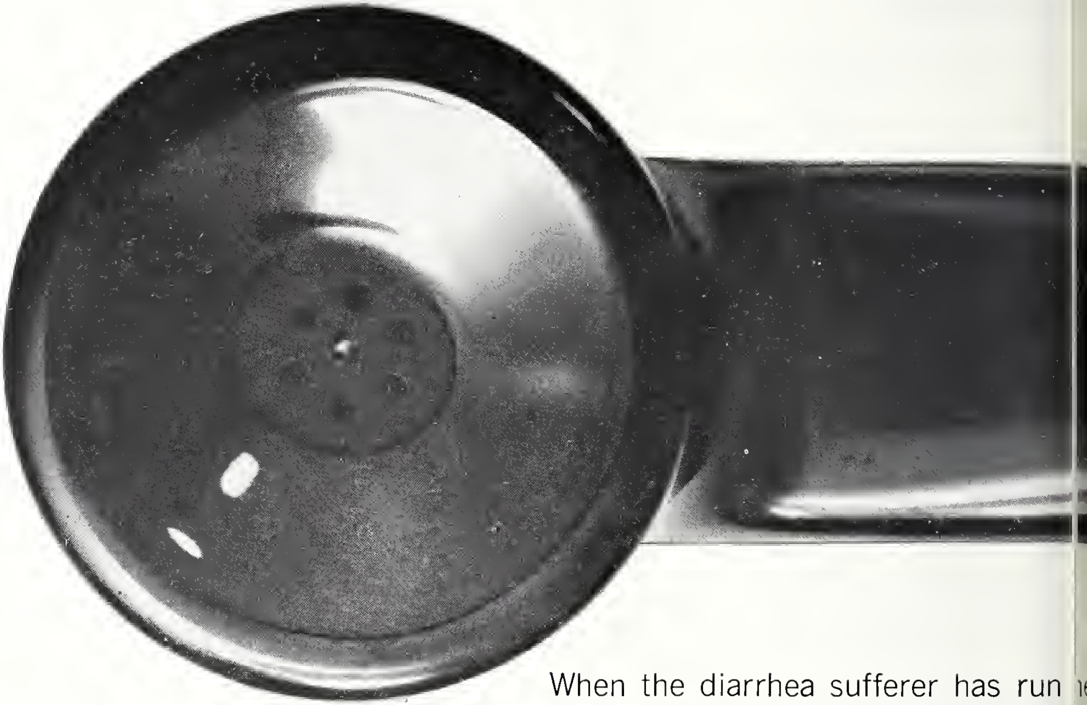

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WILLIAM H. ANDERSON, M.D., ***Columbia***

The Mid-Missouri Mental Health Center

Special Feature

The following is a summary of a report made by Doctor Anderson to the MSMA Mental Health Committee on September 19, 1965. Because of the growing interest, both lay and professional, in mental health problems and programs and because non-psychiatrist physicians are being urged to assume greater responsibilities in the field, the Editors believe that all readers of Missouri Medicine *will find this report to be of value. Doctor Anderson is Superintendent of the Mid-Missouri Mental Health Center and Associate Professor of Psychiatry, University of Missouri Medical School.*

Historically, the current community mental health center movement is a reaction against the failure of the large state hospitals to keep pace with the mental health needs of the country. Many of the state hospitals were started more than a century ago. Although representing an important advancement at the time, they have tended to become too large and too poorly staffed to maintain the desired standard of care. A few years ago the recommended solution was to limit their size or to break them into smaller, autonomous units. More recently the emphasis has shifted to the idea of supplementing existing hospitals with small, community-based units capable of giving a full range of psychiatric services. Two years ago Congress passed the "Community Mental Health Center Construction Act of 1963" (PL 88-164) which authorized federal participation in building such centers. This year Congress passed an amendment (PL 89-105) to the original act authorizing federal participation in staffing costs.

In order for institutions to qualify for grants under PL 88-164, it is first necessary to prepare a state plan for approval by the Surgeon General and to designate a single state agency to administer the program which the plan proposes. Missouri and Minnesota were the first states to win approval of their plans. According to law, Missouri's plan was advertised prior to its submission and is public property.

When the Missouri plan was approved, an application was immediately submitted for a construction grant for the Mid-Missouri Mental Health Center. The application was approved in July of this year, and a grant of $691,000 was authorized. Under the terms of the Missouri plan and the Mid-Missouri Mental Health Center application, the Columbia Center will provide certain "essential" psychiatric services for the people of a nine-county catchment area. The services are: in-patient and out-patient treatment, partial hospitalization, emergency care and consultation-education. Since these are services which normally would be provided to the area of accessibility, no significant change in the program was indicated. The Center will also furnish the same intensive care to the population of the 52-county mid-Missouri area which would have been provided without the federal grant. As an affiliate of the University of Missouri Medical Center it will help to prepare residents, nurses, social workers and others for careers in mental health work in mid-Missouri. It will also try to assist other communities in developing comprehensive mental health services of their own.

In order for a center of this kind to succeed, other community resources, e.g., vocational rehabilitation facilities, must be coordinated with medical (psychiatric) treatment. At Columbia an advisory committee of physicians and representatives of lay groups has been formed to facilitate this type of coordination. Although still in the formative stage, the committee promises to develop into a forum where lively discussions of problems will occur. Meetings are also being undertaken by the Mid-Missouri Mental Health Center staff with county medical societies in an effort to establish a two-way flow of information and a base for real cooperation. The policy of the Center will be to require referrals from physicians (except in emergencies); and this, in turn, will require active involvement by referring physicians in after-care programs and other elements of treatment. Frankly, some lay groups are skeptical about this policy. They do not question its theoretical desirability, but they apparently have some doubts about the willingness of practicing physicians to become involved in time-consuming psychiatric problems. For our part, the staff of the Mid-Missouri Mental Health Center will make every effort to issue reports as quickly as possible and to involve family doctors in treatment programs to as great a degree as possible.

In discussions to date, there seems to be a favorable disposition toward active participation by referring physicians in the care of their patients during the hospitalization phase. We do not yet, however, have enough experience to set up specific guidelines for assuring the most effective possible physician participation.

The Mid-Missouri Mental Health Center, as an element of the Division of Mental Diseases, has *service* as its primary orientation. The Center will not govern admissions solely on the basis of training needs or willingness to accept care on a voluntary basis. It also has the mission of supporting the training programs of the University of Missouri Medical Center, but no conflict is foreseen in this area of responsibility because a good service demonstration should also be a good training demonstration.

The formal opening date for the new Center probably will not be reached until the fall of 1966 or early in 1967.

The 1965 Revision of the Missouri State Medical Association's Constitution and By-Laws is lightly stapled in the center section of this issue of MISSOURI MEDICINE. This separate publication can be removed easily and filed for future reference.

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County Society News

FIRST DISTRICT

COUNCILOR,
JOSEPH FISHER, M.D., ST. JOSEPH

Buchanan County Medical Society

The Buchanan County Medical Society held a business meeting on July 7 at Hotel Robidoux. Principal item of business was to change the organization's constitution from a *pro forma* decree type of corporation to a "not-for-profit" corporation. The purpose of the change was to add flexibility to the society's activities. The vote was favorable for the change.

Dr. Thompson E. Potter, Alternate Delegate to the AMA gave an interesting and comprehensive report on the 114th Annual Session of the AMA in New York City, June 20-24. The Society received a recommendation for adoption of a standard insurance report form to replace the many varied forms presently issued by insurance companies. Action was deferred until a study could be made on which standard form might be most feasible.

Herbert C. Senne, M.D., President, presided at the meeting.

Berwyn H. Moen, M.D., *Secretary*

Grand River Medical Society

The Grand River Medical Society and Auxiliary held their first Fall meeting of 1965 at the Strand Hotel in Chillicothe on September 9. There were 38 members and guests in attendance. Following a social hour and dinner, Dr. Maxwell Berry, a Kansas City internist, discussed, "The Modern Management of Cardiac Arrhythmias."

At the business meeting the Society voted to establish an eye donor substation at the Chillicothe Memorial Hospital in cooperation with the Lions Eye Tissue Bank of the University of Missouri School of Medicine.

Albert D. Cross, M.D., *Secretary*

FOURTH DISTRICT

COUNCILOR,
ROBERT A. MAYER, M.D., CLAYTON

Lincoln-St. Charles County Medical Society

A dinner meeting of the Lincoln-St. Charles County Medical Society members and wives was held at the Dardeene Lake Country Club in O'Fallon on September 28. Following dinner the

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Anturane, brand of sulfinpyrazone, is available as white, scored tablets of 100 mg. Initially, give half a tablet 4 times daily with meals or milk, increasing in one week to one tablet q.i.d. Increase to two tablets q.i.d. if necessary, and reduce if possible to as low as half a tablet q.i.d. after control. Continue through acute attacks, which can be concomitantly treated with phenylbutazone.

Patients on other uricosurics may be transferred to this drug at full dosage.

Contraindications
Active peptic ulcer. Salicylates and citrates antagonize the drug's action and are contraindicated for concomitant use.

Warning
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Precautions
Keep patients under close supervision and make periodic blood counts. Use cautiously in patients sensitive to pyrazoles, in patients with histories of peptic ulcer, and in conjunction with sulfa drugs, the sulfonylurea hypoglycemic agents, and insulin, the actions of which may be potentiated.

In mobilizing urate deposits, the drug may precipitate acute attacks of gout, urolithiasis, and renal colic, especially in the initial stages of therapy. Ensure adequate fluid intake and alkalinize the urine. With renal impairment, test renal function periodically.

Adverse Reactions
The most frequent are upper gastrointestinal disturbances. The drug may activate peptic ulcer. Rash occurs infrequently. Although not reported to date, blood dyscrasias are a possibility.

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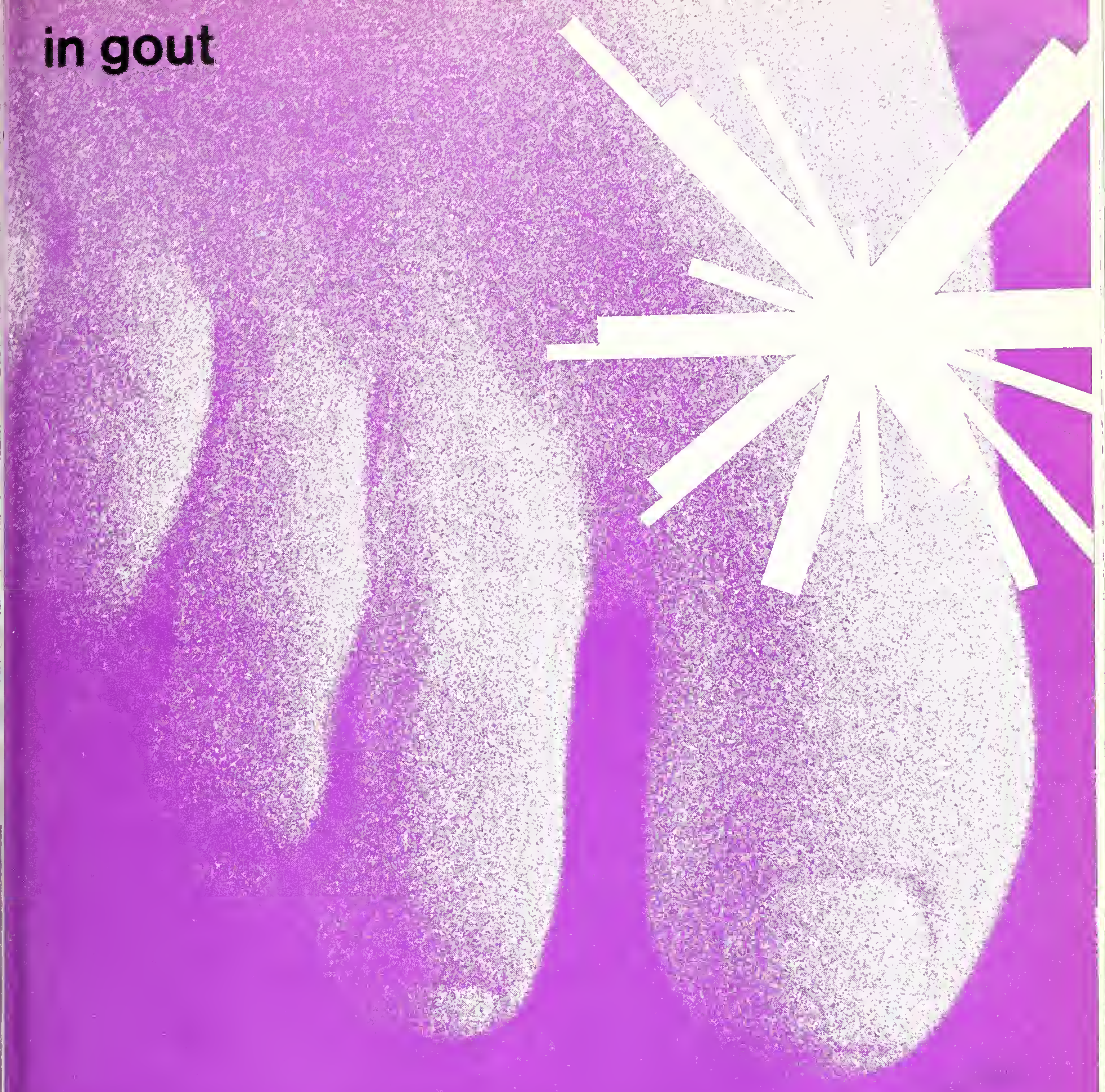

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*Kuzell, W. C., et al.: Effect of sulfinpyrazone on serum uric acid in gout: a long-term study, Geriatrics 19:894, 1964.

Geigy

entire group was privileged to hear a most interesting discussion of "Experiences While in Bombay, India, With a Mission Group," by Harry K. Purcell, M.D. of St. Louis.

After this fine talk the ladies and the doctors retired to separate meetings to handle business items pertinent to each group.

Gerald Yaeger, M.D., *Secretary*

FIFTH DISTRICT

COUNCILOR,
JAMES C. COPE, M.D., COLUMBIA

Audrain County Medical Society

A dinner meeting of the Audrain County Medical Society was held September 21 at the Country Club in Mexico. Members of adjoining societies were invited to participate in the evening activities which included a social hour and dinner.

The scientific program included two excellent discussions. George L. Hawkins, M.D., a St. Louis neurosurgeon, spoke on, "How Brain Tumors Present Themselves." Richard Yore, M.D., a St. Louis thoracic surgeon, discussed, "Chest Injuries." Following their formal presentations a very interesting general discussion was held with many questions directed from the audience to both Drs. Hawkins and Yore.

Those attending this fine program are much indebted to our two speakers.

T. L. Dwyer, M.D., *Secretary*

SIXTH DISTRICT

COUNCILOR,
ROLLA B. WRAY, M.D., NEVADA

Henry, Johnson, Pettis, Saline, Lafayette-Ray County Medical Societies

Approximately 70 people including doctors, their wives and guests attended a joint dinner meeting of the Henry, Johnson, Pettis, Saline, Lafayette-Ray County Medical Societies, at the Town House in Warrensburg on September 22. Following an enjoyable social hour, dinner was served. After dinner the ladies retired to a separate meeting where they had a special program presented. The doctors were privileged to hear a scientific presentation on "Skin Cancer in General Practice," by Robert Glass, M.D., of Sedalia. This was a very interesting and practical discussion. A number of questions from the audience followed the formal presentation by Dr. Glass.

The next meeting of the group is to be held in Sedalia on the third Wednesday night of November.

Donald E. Frein, M.D., *President*
Johnson County Medical Society

West Central Missouri Medical Society

The West Central Missouri Medical Society met at the Wagon Wheel Inn Restaurant in Harrisonville on September 9. Total attendance was 18. There was a social hour and dinner preceding the regular meeting of the society.

In the absence of the other officers, the regular meeting of the society was called to order by Roy W. Pearse, Jr., M.D., Secretary-Treasurer. Dr. Robert Wheeler introduced the speaker, Dr. Gerard Van Leeuwen, Assistant Professor of Pediatrics at the University of Missouri Medical Center, who talked about "Recent Developments in Neonatology." This very practical presentation was enthusiastically received.

Following the scientific session, the business meeting of the society was held. Minutes of the last meeting were read and approved. The Program Committee outlined the places and dates for the society for the rest of this year. The chairman of the Program Committee requested consideration of a change in the date of the November meeting due to conflicting programs. The society voted to change the date of the meeting to November 4 instead of the customary November 11. No other committee reports were presented. The correspondence received by the secretary during the summer was outlined and the action taken was described. The request of the Eye Tissue Bank Program of the University of Missouri was presented for our approval. On motion duly made and seconded, it was approved to take participation in the Eye Tissue Bank Program, each individual hospital being given the privilege to participate or not according to the desires of the hospital staff. The request of Dr. Richard Baska for a dues exempt status at the county level, this exemption being on the basis for residency training, was approved. The announcement of the District Community Health Week and the Diabetes Detection Week was made and the members were informed of the promotional materials available for their use.

It was announced that the October meeting of the society would be held in Butler, October 14, and the membership was reminded that this meeting would be the time for the election of officers for 1966. The Nominating Committee consisting of Dr. O. B. Barger, Harrisonville, Chairman, and Drs. Carter Luter and Rolla Wray

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was appointed by President Love and requested to have its report available at the October meeting. There being no further business, the meeting was adjourned.

Roy W. Pearse, Jr., M.D., *Secretary*

NINTH DISTRICT

COUNCILOR, E. A. STRICKER, M.D., ST. JAMES

Mid Missouri County Medical Society

The Mid Missouri County Medical Society and the doctors' wives held a dinner meeting at the Shepherd of the Hills Restaurant in Lebanon on September 23. Following a social hour and dinner, Violet D. Matovich, M.D., Neurologist, University of Missouri Medical School, spoke to the group on, "Neurologists Look at Strokes." This was an interesting discussion enjoyed by all.

M. K. Underwood, M.D., *Secretary*

TENTH DISTRICT

COUNCILOR, W. D. ENGLISH, M.D., CARDWELL

Mineral Area County Medical Society

The Mineral Area Medical Society met in the Hoctor Building at the State Hospital on September 23 and heard a lecture by William A. Knight, Jr., M.D., on "Malabsorption Syndromes: Diagnosis and Treatment." During his presentation, Dr. Knight was assisted by Dr. Flores, also of the St. Louis University Medical School.

Following the scientific presentation, the business meeting was called to order by the president, Dr. Paul Dennis. Dr. Ben Bull of Ironton then reported on some matters on the state level. The membership indicated that they did not wish to change their previous position, which had been against moving the State Headquarters of the Medical Association to Jefferson City.

Dr. Chastain reported on some correspondence with Governor Hearnes and Mr. Phillip Maher, the Governor's Administrative Assistant for Urban Affairs, in regards to the fee schedule for the physical examinations and laboratory studies necessary for the Neighborhood Youth Corps enrollees. In this correspondence, Mr. Maher pointed out that the examination and fee schedule were arrived at after consultations with the Chief of the State Division of Health and that it would be impossible to achieve a more equitable fee with the appropriations at hand. He did indicate that it was the intentions of the Executive Office to consult with the State Medical Association in future occasions. One of the members pointed out that the whole program had been implemented with unusual speed, and that in view of the time factors, the overall accomplishments were remarkable. There was then further discussion about the value of the Youth Corps programs, with the members apparently generally in favor with the accomplishments at both the Farmington State Hospital and the local school districts.

It was pointed out that one member who had recently joined the Society had subsequently moved to Alaska, and despite two billings had not paid 1965 dues. It was voted to drop this member from membership in the Society.

It was voted to refer the implementation of the Community Health Week Drive to the medical society auxiliary. No action was taken about a Diabetes Detection Drive. After discussion concerning the disposition of surpluses from the Oral Polio Immunization Drive of a year and a half ago, the meeting adjourned at 10:45 p.m.

Those attending were Drs. Paul Dennis, Retus Osborne, Jose Jimenez, Emmett Hoctor, Jack Mullen, Ben Bull, Robert Huckstep, C. E. Carleton, F. R. Crouch, C. W. Chastain, Van W. Taylor and Gaston Magrinat.

C. W. Chastain, M.D., *Secretary*

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Volume 62, Number 11—November, 1965

Missouri Medicine

JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION

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MIECZYSLAW CEGIELSKI, M.D., *Omaha, Nebraska*

Rupture of the Duodenum in Blunt Abdominal Trauma

Speed in diagnosis and speed in surgical repair are the keys to successful handling of duodenal rupture resulting from nonpenetrating abdominal injury. The author supports this basic theme with facts and figures, and he offers a series of succinct guidelines which the physician may find helpful in dealing with such cases from initial examination to recovery. The development and application of these guidelines have resulted in a marked decline in mortality rates for duodenal rupture.

Doctor Cegielski was from the Surgical Service of St. Louis County Hospital when he wrote this paper. He presently is in private practice in Omaha and on the Surgical Staff of Creighton University St. Joseph Memorial Hospital, Lutheran Medical Center and Doctors Hospital in that city.

DUODENAL RUPTURE IN BLUNT abdominal trauma is a severe injury carrying high postoperative morbidity and mortality. Delayed diagnosis and consequently delayed surgical intervention are two major factors contributing to unsatisfactory results. This is most often caused by delayed hospitalization, inadequate history (often obscured by alcoholic amnesia), prolonged in-hospital observation, lack of clear laboratory and clinical proof of perforation, co-existent injury deflecting surgeon's attention, and failure to explore the retroperitoneal space during the operation for blunt abdominal trauma.

We had the opportunity to follow five cases of duodenal rupture resulting from non-penetrating abdominal injury. All of these patients were admitted to the Surgical Service of the St. Louis County Hospital between November 1962 and December 1964. All patients were operated within few hours from admission and all recovered. Clinical data of our own observations are summarized in Table 1.

STATISTICS

The largest published statistics[1, 2] indicate that duodenal rupture occurs once in 100 cases of internal injury resulting from blunt trauma to the abdomen. Men are affected ten times as often as women, obviously as a result of major exposure to trauma in industry, transportation, farming and fights. The oldest reported patient was 66 years old; the youngest, 20 months.

Survey of the literature shows that the mortality from duodenal rupture was in the 86-92% range before and during the World War I period, exceeded 50% in the period between the two World Wars and dropped to 20% between 1940 and 1950. There were 96 cases of duodenal rupture from blunt trauma presented in world medical literature between 1954 and 1963. Thirteen of these died, bringing the mortality rate down to 13.6%.

ANATOMICAL CONSIDERATIONS

Deep anatomical location of the duodenum,

TABLE 1

Summary of Five Observations

Personal Data, Type of Injury	Time		X-ray of the Abdomen	Intraperitoneal Tap	Surgery (Findings and Repair)	Intraperitoneal Drain	Antibiotics	Complications	Days in Hospital	Result
	ACCIDENT TO ADMISSION	ADMISS. TO SURGERY								
G.N., 25 W.F. Driver, steering wheel injury; no seat belt.	Less than 1 hr.	2 hrs.	Negative	Not done	4 cm. longitudinal tear anterior wall first portion of duodenum. Closed transversely in 2 layers.	Not used	Not used	None	8	Recovery
W.K., 31 W.M. Driver, steering wheel injury; no seat belt.	1½ hr.	5 hrs.	Free Air	Negative	Circular, almost complete rupture of the III portion. Tear in the omentum, serosa of colon and posterior parietal peritoneum. Reanastomosis of duodenum.	Sump-drain for 7 days	Penicillin and Streptomycin for 5 days	Superficial wound infection	12	Recovery
G.P., 48 W.M. Driver, steering wheel injury; no seat belt.	1 hr.	2 hrs.	Negative	Positive (blood)	Circular, almost complete rupture of the III portions, covering peritoneum intact. Reanastomosis of duodenum.	Sump-drain for 8 days	Penicillin and Streptomycin for 5 days	None	15	Recovery
N.Ch. 44 W.M. Truck-driver, crushed between truck and edge of loading platform.	½ hr.	2 hrs.	Negative	Not done	Circular, almost complete rupture of the IV portion. Torn splenic pedicle. Laceration, root of the mesentery with hemorrhage. Sero-muscular laceration of anterior gastric wall. Splenectomy, reanastomosis of duodenum, repair of gastric wall, hemostasis.	Sump-drain for 8 days	Penicillin and Chloromycetin for 6 days	None	16	Recovery
G.T., 42 W.M. Driver, steering wheel injury, no seat belt.	Less than 1 hr.	2 hrs.	Negative	Not done	Circular, almost complete rupture of the IV portion. Laceration of the root of the mesentery and of the superior mesenteric vein. Reanastomosis of the duodenum	Sump-drain for 6 days	Penicillin and Chloromycetin for 5 days	None	10	Recovery

which is protected anteriorly by the abdominal wall, costal arch, liver, stomach and transverse colon, and posteriorly by the spine and massive spinal musculature, accounts probably for low vulnerability of the duodenum. On the other hand, fixation of the duodenum, lack of mesentery and buttressing against the spinal column are major factors contributing to injury. Several authors, who compared the length of the duodenum with the length of the entire gastro-intestinal tract, found that duodenal injuries remain roughly in proportion to any other intestinal segment of equal length.[3, 4] De Paulis compared the frequency of duodenal rupture and duodenal length to those of the remaining part of the intestine and found the duodenum more vulnerable to blunt trauma than jejunum, ileum or colon.[5]

MECHANISM OF INJURY

Out of 101 surveyed cases (96 published between 1954 and 1963, and our five observations), 23 were victims of automobile accidents, 11 were victims of other transportation agents (train, street car, bicycle, motorcycle), 19 were injured when falling from a height or against an edged object, 20 sustained a blow to the abdomen (fist, foot, horse-hoof), 17 were crushed between a moving and immobile object (usually between a truck and a platform or wall). In the remaining 11 cases, the cause of injury was not reported, not determined or different from those listed above.

It is frequently stressed in the literature that steering wheel injury to the automobile driver is becoming a more and more frequent cause of duodenal rupture. Out of 23 such ruptures resulting from auto accidents, the steering wheel type of injury to a driver not protected by a seat-belt was definitely established in 13 cases.

Several typical mechanisms leading to duodenal rupture might be described as follows:

1. Crushing of the duodenum against the spine as result of a violent direct trauma to the abdominal wall.
2. Tearing of the relatively fixed duodenum when stomach and liver on one side and the intestinal mass on the other side move rapidly in opposite directions.
3. "Blow-out" of the duodenum when filled with food and secretion, functionally closed between the pylorus and duodeno-jejunal flexure, and then subjected to sudden pressure from the outside.
4. Tearing of the duodenum by a sudden and extensive hyperextension of the lumbar spine.
5. Perforation of the duodenal wall from the inside by a "jet-stream" of food and gastric juice, forcibly ejected through the pylorus due to rapid contraction of the stomach.

Crushing and "blow-out" are considered the most frequent causes of duodenal rupture.[6] Crushing happens most often when the force acts in a plane perpendicular to the anterior abdominal wall. Narrow-edged objects are most apt to depress the abdominal wall deeply enough to crush the intestine against rigid substance of the lumbar vertebral bodies. "Blow-out" results most often from a fall against a flat surface. Pre-existent pathology of the duodenal wall may make this particular site especially susceptible to rupture. Brabrand presented a case in which blunt abdominal trauma caused perforation of a diverticulum of the second portion of the duodenum.[7] Several authors stress the fact that duodenal or intestinal rupture has never been reported in boxers or professional fighters who receive frequent and severe blows to the abdomen. This may be explained by the protective action of the abdominal musculature which, when contracted, offers adequate protection as opposed to the completely relaxed abdominal musculature of a driver or other non-suspecting victim.

The possibility of a delayed rupture must be considered when original trauma damages the intestinal wall severely enough to cause localized necrosis and subsequent perforation.

Localization of the rupture has not been analyzed since Guibe's publication of 1910. We were able to establish exact localization of the rupture in 74 cases which have been published within past ten years. These and our own five observations present the following figures: first portion of the duodenum was injured in 7.6% of the cases; second portion, in 30.4%; junction of the second and third portions, in 12.6%; third portion, in 36.7%; fourth, in 7.6%; and the duodeno-jejunal flexure, in 5%. It becomes apparent that the third portion of the duodenum, being the longest, being completely fixed and crossing the vertebrae, is most frequently traumatized.

The laceration is usually linear with more or less damaged, devitalized edges. Occasionally, extensive crushing of an intestinal segment occurs. The extent of the laceration may be anywhere from pin-point to complete transsection. In the 79 cases which we studied, extensive crushing was found in two, complete or almost complete transsection in 29 (37%), laceration of half of the circumference or more in 24 (30%), less than half of the circumference in 17 (22%), and small lacerations were found in seven cases. Several authors mention that in from one-third to one-fourth of all ruptures involving the extraperitoneal part of the duodenum, the covering posterior parietal peritoneum remained intact and the ruptured intestine did not communicate with the free peritoneal cavity.

CO-EXISTENT INJURY

Most frequent, but less significant, is injury to the abdominal wall in form of an abrasion, contusion or subcutaneous laceration of the muscle. Fractures are also frequent. Cotrell reports co-existent fracture in two-thirds of all duodenal ruptures from blunt trauma, two-thirds of these being rib fractures. Co-existent injuries to practically all abdominal organs have been reported. Injury to the pancreas, liver, spleen and kidneys are the most serious. Tears in the omentum and mesentery are the most frequent, but are less significant. Importance of co-existent injuries may be summarized in three points proposed by Cohn *et al.*:[8]

> 1. Serious co-existent injury, even if promptly recognized and properly treated, aggravates the patient's condition, increases morbidity and mortality.
> 2. Obvious injury to other abdominal organs may divert the surgeon's attention and cause him to overlook the duodenal rupture.
> 3. A contrary situation is also possible when a surgeon involved in the difficult task of repairing a torn duodenum overlooks injury to other organs.

CLINICAL PICTURE

The clinical picture of duodenal rupture from non-penetrating trauma depends on three basic factors: (1) time elapsed from injury, (2) communication of the intestinal lumen with the free peritoneal cavity and (3) co-existent injuries.

The clinical picture of intraperitoneal rupture resembles that of any other gastro-duodenal perforation. The spillage of bile, pancreatic juice, gastric secretion, blood and food into the peritoneal cavity causes the rapidly developing abdominal catastrophe known as "acute abdomen." The symptom-free initial period is short, and generalized peritonitis develops rapidly. Free intraperitoneal air appears in one-third of all cases on X-ray examination. It is the consensus that intraperitoneal rupture usually makes itself known early, and with prompt surgical intervention the chances for recovery are good.

Retroperitoneal rupture of the duodenum presents a different clinical picture with fewer diagnostic clues, more diversity of symptoms, slower progression and consequently more difficulty in diagnosis. This often results in delayed surgical intervention and jeopardizes the chances for recovery. Many authors have noted that with retroperitoneal rupture the inital shock of trauma is followed by characteristic symptom-free interval which usually lasts several hours and is followed by rapidly developing acute illness.

Pain and tenderness are the most prominent symptoms. They are usually localized in the epigastrium or mesogastrium, often radiating to the back or to either shoulder, later becoming more severe and generalized. Radiation of the pain to both or either testis was reported and explained as resulting from irritation of the spermatic nerves by the retroperitoneal inflammatory process. Nausea and vomiting are frequently observed. Presence of blood in the vomitus should arouse one's suspicion. Rigidity of the abdominal wall is usually less marked and appears later. Laboratory tests and clinical parameters indicate an acute inflammatory process, which if not arrested by a prompt surgical intervention develops into cellulitis of the retroperitoneal space and generalized sepsis. Eventually, the inflammatory process crosses the thin barrier of the parietal peritoneum and generalized peritonitis develops.

Several other positive findings are reported in the literature, but many of them rare, appear late and do not help significantly with the diagnosis. Soft tissue emphysema in the groins and scrotum, on the neck and in the axillae and supraclavicular areas have been noted. Elevated serum-amylase suggests co-existent injury to the pancreas or spillage of the pancreatic juice from the duodenum. Radiological examination may bring some diagnostic clues. The most common of these is the presence of air in the retroperitoneal space with a characteristic alveolar pattern, sharply outlining the right kidney and psoas shadow. Widely spread retroperitoneal emphysema may reach the mediastinum and/or pelvic structures. Instillation of a thin contrast medium through a naso-gastric tube, if it brings evidence of extravasation, may help in establishing a positive diagnosis.

In most instances the diagnosis of duodenal rupture is made during the operation on exploration of the abdominal organs. Pre-operative diagnosis is often limited to such generalities as internal injury, ruptured viscus, peritonitis, etc.

OPERATIVE FINDINGS

Operative findings in intraperitoneal rupture are those of generalized peritonitis. Exudate often has a biliary or biliary and hemorhagic character. Laceration of the anterior duodenal wall is usually easily located. In other cases, blood and bile spilling from a rent in the posterior parietal peritoneum tend to attract the surgeon's attention and indicate the direction of further exploration.

Extraperitoneal rupture presents a different picture. Exudate in the peritoneal cavity is nonexistent or scanty; peritonitis is nonexistent or minimal. Positive findings are confined to the retroperitoneal space, where hematoma should alert the surgeon. Localization of the hematoma depends on the damaged part. Most often, when the second or third portion of the duodenum is ruptured, the hematoma is located in a triangular space limited by the ascending colon, transverse mesocolon and root of the mesentery. Hematoma located to the left of the vertebral column and root of the mesentery is associated with the rupture of the fourth portion of the duodenum. Frequently air-bubbles and an admixture of bile in the hematoma indicate duodenal origin. Less often, spotty necrosis of the retroperitoneal adipose tissue indicates spillage of the pancreatic juice.

Thorough exploration of the retroperitoneal organs is mandatory. Failure to do so may cause overlooking of a duodenal rupture with grave consequences. In early reports of Schumacher (1910) and Miller (1916) duodenal rupture was not recognized at the time of operation in 14 out of 37 cases (39%), with a resulting mortality rate of close to 100%. Recent papers also report duodenal rupture not recognized during surgery in as many as 30% of all cases, sometimes even during a second operation.[9]

Surgical Treatment

Repair of the lacerated duodenum is obviously the first step in correction of damage. In cases of complete or almost complete transsection, this amounts to an end-to-end anastomosis. The importance of debridement of all frankly devitalized or questionably viable tissue and of non-stenosing, meticulous suture-technique does not require elaboration. Dissection and adequate mobilization of the damaged segment of bowel facilitates repair. Meticulous toilet of the retroperitoneal space and peritoneal cavity, and the arranging of adequate drainage will do much toward preventing postoperative complications.

Postoperative care of duodenal rupture differs little from any other major abdominal trauma or elective surgery. Adequate decompression of proximal intestinal segment by means of nasogastric tube or gastrostomy is of utmost importance, and next to it is parenteral administration of fluids, maintenance of electrolyte-balance, replacement of blood loss, etc. Oral feeding should be delayed until one is sure of the intactness of the suture-line and re-established peristalsis.

Administration of antibiotics is optional and depends both on the surgeon's personal convictions and the individual situation. Wurnig compared two groups of patients with traumatic rupture of the duodenum.[10] The first group was treated between 1922 and 1942, received no antibiotics and suture of the duodenum was often supplemented by gastro-jejunostomy. In this group the mortality rate was 77% (33 out of 43 cases). The second group, between 1947 and 1956, was treated with suture of the duodenum, drainage of the suture-area, prolonged nasogastric suction and with antibiotics. Here the mortality level was 15% (two out of 13 patients).

Postoperative Complications and Results

The most frequent postoperative complication is a duodenal fistula resulting from an incompetent suture line, disruption of the suture line by intraluminal pressure in an inadequately decompressed bowel, or necrosis of traumatized duodenal wall subjected to digestive action of inadequately drained duodenal or pancreatic secretion. Other complications result from infection of the peritoneal cavity or retroperitoneal space. Generalized peritonitis, retroperitoneal phlegmon, intraperitoneal, subhepatic or subdiaphragmatic abscess belong in this category. Stenosis at the suture line, internal fistulae, wound infection or disruption, and pulmonary complications complete the list.

The utmost importance of early surgery is stressed by all authors discussing this problem. Wainwright in 1949 presented the following data on mortality in small bowel perforation in relation to timing of surgery: 15% mortality in cases operated in less than four hours, 44% mortality in cases operated between four and eight hours, and 70% mortality in cases operated later than 12 hours. In Table 2 we attempted to correlate the results of treatment, post-operative morbidity and mortality with the factor of time elapsed between injury, hospitalization and surgery. These results again confirm importance of early surgery in abdominal trauma.

Summary

The following factors contribute to proper

TABLE 2*

MORTALITY FROM DUODENAL RUPTURE IN RELATION TO TIME-SPAN BETWEEN INJURY, HOSPITALIZATION AND SURGERY

		Time (Hours) Average		
Type of Rupture	*Number of Cases*	ACCIDENT TO ADMISSION	ADMISSION TO SURGERY	ACCIDENT TO SURGERY
Intraperitoneal	3, fatal	21	3	24
	17, survivors	7	2	9
	20, total	9	2	11
Retroperitoneal	2, fatal	12	15	27
	11, survived, complicated by intest. fistula	7	13	20
	25, survivors, no complications	6	8	14
	38, total	6½	10	16½

* Based on 53 cases collected from the world literature from 1954 to 1963, where time-factor was reported, and our five observations.

management of duodenal rupture:

Preoperatively: High index of diagnostic suspicion and constant, careful bedside observation should be maintained. Decision to operate should be based on suspicion of internal injury. Delay of operation increases chances for positive and precise diagnosis, but diminishes the victim's chances for survival.[11] Mortality rate is in direct ratio to the number of hours lost before surgery; the latter is, in turn, related directly to the index of suspicion of the surgeon.[12]

Intraoperatively: Meticulous exploration of all intraperitoneal and retroperitoneal organs should be carried out. Possibility of multiple injury must be constantly borne in mind. Retroperitoneal hematoma with bile-stains and/or air bubbles is an important road-sign pointing to duodenal rupture, and must be thoroughly explored.

Postoperatively: Constant decompression of the stomach and duodenum proximal to the suture line, adequate hydration, replacement of blood and electrolyte loss, cautious approach to oral feeding and use of antibiotics where indicated, all contribute to successful handling of duodenal rupture. Other supportive measures should be considered in light of circumstances in each individual case.

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Retarded growth and bone age in children with cystic fibrosis can be substantially alleviated and significant weight gains are possible, through treatment with a relatively new anabolic steroid, according to results of a study at the Cystic Fibrosis Center, University of Arkansas Medical Center. Even "more impressive" than the growth data were the clinical responses to Winstrol (stanazolol) in a group of 17 children who had not responded to accepted cystic fibrosis therapy, according to the report of Drs. James L. Dennis and Theo C. Panos in *Pediatric Herald* (6:2, 1965). They noted a decided improvement in muscle tone, almost total elimination of the "clubbed" fingers in severely afflicted children, and intercurrent infections less incapacitating.

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Carcinoma of the Tonsil

Results of Radiation Therapy and Consideration for Combined Radiation and Surgical Treatment

A report on 27 patients treated for epidermoid carcinoma of the tonsil, and a review of the principal symptoms and characteristics of the disease. While employing only radiation therapy in their series, the authors propose that a combination of radiation and surgery may be the key to improved survival rates in tonsil carcinoma cases.

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RECENT ADVANCES IN RADIATION therapy and surgery have brought the probability of survival of carcinoma of the tonsil from the realm of near hopelessness[1, 2] to that of reasonably frequent cure.[3] Radiation therapy has produced an average reported survival rate of 19.3% and a highest reported survival rate of 32%. Surgical therapy alone has been equally unsuccessful. A review of our patients treated with radiation therapy alone demonstrated a five-year survival of 44.5%. The high incidence of recurrence at the primary tumor site as the cause of therapy failure leads us to believe that even better results can be obtained through the planned combination of radiation therapy followed by surgical resection. Theoretical considerations for this approach will be discussed.

MATERIAL

During the years 1950-1959, 27 patients with carcinoma of the tonsil were referred for and underwent radiation therapy. There were nine women and 18 men ranging in age from 34 to 80 years with an average for the entire group of 56.2 years. The initial complaint of 19 patients was a sore throat varying in duration from three weeks to one year (Table 1); four patients complained of a painless mass in the neck, present from four months to three years; one patient had an earache lasting one month and another complained of hoarseness for six weeks. In two instances, the initial complaint was not listed in the records. Additional associated symptoms included dysphagia, trismus and hemoptysis in one patient each. The tumor was limited to the tonsil in only two patients, while in the remainder of the patients there were varying degrees of involvement of the tonsillar pillars, soft palate, uvula, pharyngeal wall and the base of the tongue. In 17 patients there was cervical lymph node enlargement suggestive of metastatic tumor.

TABLE 1
PRESENTING SYMPTOMS

27 Patients	
Sore Throat	19
Neck Mass	4
Earache	1
Hoarseness	1
Dysphagia	1
Trismus	1
Hemoptysis	1

In 20 of the patients aggressive therapy with a curative aim was undertaken. The treatment in this group consisted of a tumor dose of 5,000 to 6,000 roentgens administered to the tonsil and lymph node bearing area in a six week period of time using orthovoltage therapy equipment. In seven patients the therapeutic aim was palliation and doses less than 5,000 roentgens were administered (Table 2). The patients receiving palliative therapy have been included in the series for completeness and demonstration of the survival rate in the total group.

Twelve (44.5%) out of the 27 patients treated lived five years or more free of clinical evidence of disease. Of these surviving patients, one developed a recurrence at the primary site nine years following treatment, and one developed

TABLE 2

Dosage to Tumor and Node Bearing Areas

	Number of Patients
6,000 r or more	6
5,000-5,900 r	14
3,000-4,000 r	3
Less than 3,000 r	4

undifferentiated carcinoma in axillary and supraclavicular nodes associated with a left hilar mass five and one-half years following therapy. It was not known, in that patient, if these were metastases from the tonsil or a second primary tumor.

Seven of the twelve five-year survivors had clinically positive lymph nodes at the time of initiation of therapy. In two of these patients a lymph node dissection was performed following the radiation therapy. Evidence of persistent tumor was present in the resected nodes of one patient and absent in the other. Ten of the 15 patients not surviving five years had clinically apparent lymph involvement initially. Of the 15 patients not surviving five years, 13 had persistent disease only in the primary site. In the other two failures, one patient had persistent disease in the regional lymph nodes and one patient developed pulmonary metastases (Table 3).

Thus in the group of 15 patients whose disease was not controlled, the lymph nodes appeared to have been adequately treated with radiation therapy, there being only one failure due to tumor persistent in the nodes. It must be remembered however, that the small incidence of lymph node involvement in the failures may only be *apparent*, because many of the patients dying of persistent primary disease may have lived such a short period of time as to preclude the development of metastases in regional nodes or other distant sites.

Of the 13 patients who died with recurrent or persistent tumor at the primary site, 12 expired with no evidence of disease at any other site. Only one recurrence appeared after the first year at the primary site.

Discussion

Carcinoma of the tonsils comprises 1.5 to 3% of all cancers and makes up 10% of all the cancers of the upper air passages being second in frequency only to carcinoma of the larynx.[4] Squamous cell carcinoma constitutes 72% of the tonsillar lesions with 13% due to lymphosarcoma. The remainder of tonsil tumors are distributed among transitional cell and undifferentiated carcinoma, leukemia, Hodgkins disease and "lymphoepithelioma." Males are more often affected than females; in one reported group of 90 patients there were 84 males and six females.[5] The onset of the disease in reported groups is greatest between the ages of 60 and 80 with a range from 29 to 87 and a median of 65. Onset of the disease is reported to be somewhat earlier in females.[3, 6]

Symptomatology of tonsillar lesions depends largely on the gross features of the tumor. The lesion may arise from the tonsillar fossa and present only a small portion on the surface of the tonsil. By the time the tumor has reached a diameter of 2 cm, invasion of neighboring structures has occurred involving the tonsillar pillars, soft palate, base of the tongue, pharyngeal wall, alveolar ridge or mucosa of the cheek. Since the tactile sense of the pharynx is slight in comparison to that of the oral cavity, there is extremely insidious onset of symptoms so that only 10% of the patients register awareness of a lump in the throat as an initial complaint despite an average tumor size in reported series of 3.5 to 4 cm.[3] In these series the presenting symptoms included sore throat (73% of the patients), a mass in the neck (25%), dysphagia (18%), trismus (7%), or bleeding from the throat (rarely). A mass in the upper neck is frequently noted and usually represents tumor involvement of a subdigastric node. Node involvement can extend down the jugular chain to the level of the clavicle and often into the posterior triangle of the neck.[3, 7]

Tumors limited in size and extent are amenable to primary surgical resection. However, in most series reported, as in this one, a great

TABLE 3

Clinical Course Following Radiation Therapy

	Initial Cervical Lymph Node Involvement	*Cervical Lymph Node Involvement Following Therapy*	*Recurrent Primary Tumor*	*Distant Metastases*
Five year survivals (12)	7	0	1 (at 9 yrs.)	1 (at 5½ yrs.)
Survival less than 5 years (15)	10	1	13	1

majority of tumors have obtained a large size at the time of definitive diagnosis and have exceeded the limits of surgical resection either because of the extent of the tumor or lymphatic involvement. Radiation therapy has progressed from the use of radium packs and local radium applications to external orthovoltage and supervoltage therapy. Supervoltage therapy (Co 60 or Betatron) is significantly more effective than orthovoltage (250 to 290 kv) therapy in controlling the primary lesion.[8] Radium or cobalt needle implants have frequently been used as a supplement to external radiation therapy.[9]

Reports of courses of treatment of 3,500 roentgens delivered in three to five days or massive doses of 7,000 to 12,000 roentgens delivered in six weeks have been described.[10, 11] However, the cure rate is no greater and there is a higher incidence of tissue necrosis indicating that these somewhat radical treatment methods are contraindicated.

Because of the frequency of local recurrences of the tumor in the tonsillar area in the present series, occasional patients subsequent to this study period have been given additional radiation to a reduced field where it was felt that the tumor showed evidence of persistent local disease. As an alternative, an implant of radium or cobalt needles may be made into the base of the tongue, a common area of recurrence outside of the primary site.[9]

Undergoing curative radiation therapy requires a great deal of fortitude on the part of the patient. During the therapy period a radiation reaction develops in the pharynx and oral cavity typified by severe mucositis which has its onset in the second or third week and persists as a severe sore throat for at least two weeks following completion of treatment. The need for encouragement and understanding can not be too strongly emphasized. The patient is warned that he will undergo a considerable degree of dysphagia during and for a few weeks following the course of treatment. He is encouraged to eat his regular diet as long as possible and when this becomes intolerable, a high calorie, high protein soft food or liquid food diet is advised. Sedation and topical analgesics may be useful. A viscous suspension of local anesthetic may be of benefit. Scrupulous oral hygiene is emphasized to prevent infection and necrosis and to promote optimal mucosal healing.

Combined Radiation and Surgical Approach

Radiation therapy alone has cured over 40% of the patients in this series. Of concern to us is not the group of patients who have done well but rather the group of patients in which there was recurrence or persistence of the tumor at the primary site despite extremely aggressive therapy. In view of the large number of local persistences and recurrences our radiation therapy has recently been integrated with surgical resection. The approach of preoperative radiation therapy followed by a wide surgical resection is supported by experimental findings which demonstrate that such therapy will reduce significantly the probability of recurrences in the operative site and recurrence of metastatic lesion.[12] Radiation therapy decreases the viability of cells which might be disseminated or left implanted in the surgical wound site. Reduction of viable tumor cells by a significant increment has, in animal experiments, been shown to decrease the recurrence rate.[13] Improvements in survival have been demonstrated following this combined approach of the treatment of carcinoma of the lung,[14, 15] breast[16] and colon.[17]

Our patients are now given a pre-operative course of radiation therapy of 2,000 to 3,000 roentgens to the primary site and lymph node bearing areas administered with a Cobalt 60 Unit in a period of two to three weeks. Within seven to ten days following the completion of radiation therapy a surgical resection of the tonsil, contiguous soft palate, lateral pharyngeal wall and base of the tongue is performed along with an incontinuity resection of the cervical nodes of the involved side. The procedure has now been carried out in 30 patients. In many of these patients, the surgical specimen following this resection has shown no evidence of residual tumor on histologic examination.[18, 19] In a number of other specimens the residual tumor was smaller and demonstrated marked radiation change. In other specimens there was no radiation change. In spite of the apparent absence of tumor cells in many of these specimens it is felt that persistent tumor requiring resection is clinically present but not demonstrable due to limitations in histologic method. It is imperative that an operative field as wide as possible be planned prior to any radiation therapy. It should incorporate a margin of normal tissue around the originally involved area rather than around the smaller area present following completion of X-ray treatment. Regression of the tumor is not an indication that the surgical margins can be reduced, but rather that surgery of the original extent may be more frequently successful. Sufficient time has not elapsed to evaluate the efficacy of combined therapy but on theoretical

(Continued on page 922)

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Pancreatic Pseudocyst Treated by Cystogastrostomy

Case Report

Report of the successful management of a pancreatic pseudocyst by cystogastrostomy. The authors suggest that direct visual inspection of the cyst by opening the gastrocolic omentum be made before a decision is made on the final surgical approach. The degree of adhesion between the walls of the cyst and stomach may help determine the most appropriate method of anastomosis.

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Pancreatic pseudocyst is a relatively uncommon condition. It is always a compelling subject to most surgeons who in their lifetime see few if any pseudocysts. The treatment is surgical. Prolonged conservative therapy may result in rupture into the lesser sac or peritoneal cavity with resultant hemorrhage, shock or generalized peritonitis. Koucky *et al.*[1] reported such rupture carries a mortality of about 60%.

Howard and Jordan[2] listed the following etiological factors: gallstone pancreatitis 7%; alcoholic pancreatitis 51%; and trauma 19%. Blunt trauma of the upper abdomen in which the pancreas is compressed against the lumbar vertebrae may result in the escape of pancreatic juice into the lesser sac. The inflammation in this area seals the Foramen of Winslow, and a cyst develops. The pseudocyst thus formed may or may not have a persistent communication with the pancreatic ductal system. The content of the average cyst ranges from 0.5 to 3.5 liters of fluid. The largest reported contained 22 liters. Ninety-five per cent of the pseudocysts are unilocular and 5% multilocular.

The symptoms of pancreatic pseudocyst include pain, nausea, vomiting, anorexia and diarrhea. The signs in order of their frequency are mass, diabetes, tenderness, icterus, fever, hydrothorax and ascites. Physical examination will reveal a mass in about 75% of the patients. The best aid in the diagnosis of pancreatic cyst are the roentgenographic alteration of the upper gastrointestinal tract which may be demonstrated following the ingestion of a barium meal. The displacement or indentation of the stomach, duodenum or transverse colon and rarely the kidney, depending upon the location of the cyst, are so characteristic that the diagnosis of pancreatic cyst can be made with a high degree of accuracy; but there are no features which distinguish pseudocyst from the other types of pancreatic tumors. Holt,[3] after an exhaustive search in the literature, found that the only extra-alimentary masses which simulated this deformity were a congenital cyst believed to have been of Wolffian body origin and a neoplasm arising from the lower pole of the left kidney.

Blumenthal and Probstein[4] listed four forms of surgical procedures which have been employed in the surgical therapy of pancreatic pseudocyst: (1) excision, (2) partial pancreatectomy (when there are multiple small cysts), (3) marsupialization (external drainage) and (4) internal drainage into the stomach, jejunum or gallbladder, depending upon the location of the lesion.

Complete excision is ideal but hazardous due to the adherence of the cyst to vital structures. Marsupialization produced disadvantages of many complications such as persistent fistula, premature closure of the sinus tract with reformation of the cyst or abscess, prolonged period of convalescence and excoriation of the skin by pancreatic enzymes.

Cystogastrostomy has been employed more

frequently than any other internal drainage procedure. The mortality rate has been low, as has been the complication rate, and the long term results have been good. The advantage of this procedure is its simplicity. Transgastric anastomosis of such a cyst was first reported by Jedlicka[5] in 1923, and then by Jurasz[6] in 1931. The objection has been raised against this procedure that the reflux of gastric juice and food particles into the cyst may cause digestion of the wall or infection in the cyst cavity. These complications have not materialized in the various reports published in the literature.

Kafka[7] reported a case of hemorrhage following transgastric cystogastrostomy, and Maxeiner and Maxeiner[8] have reported the development of a marginal ulcer at the anastomotic site.

CASE REPORT

A 50-year-old white male was seen on November 20, 1963 because of diabetes mellitus. He admitted occasional excessive consumption of alcoholic beverages. While in military service in 1943, during an altercation he was struck by a rifle butt between the shoulder blades while lying face down with his abdomen against the hard cement floor. Following this incident he experienced severe epigastric pain for three or four days and was hospitalized for ten days. In the last few days before admission he felt nauseated. Occasionally, during the last seven to eight years, he experienced pain between the shoulder blades.

Physical examination by abdominal palpation revealed a smooth, oval, firm and slightly tender mass over the left upper abdomen extending to the midline. It did not move with respiration. His weight was 193 pounds; blood pressure of 130/70 mm Hg.; pulse rate was 84 per minute; respirations were 12 per minute; temperature was 99 degrees F.

Admission fasting blood sugar was 162 mgm. per cent and fractional urinalysis showed an occasional 4 plus sugar. Serum amylase was 95 SU; bilirubin 0.55 mgm. per cent; BSP with 7.8% dye retention; SGOT 12 SU; cholecystogram and IVP were within normal limits.

The upper gastrointestinal tract X-ray series revealed a large tumor mass encroaching upon the lesser curvature of the stomach and displacing antero-laterally (Fig. 1). A diagnosis of pancreatic cyst was made. The patient was put on a 1200 calories diet, and thereafter his fasting blood sugar was between 88 mgm. to 119 mgm. per cent with consistently negative sugar in the urine.

The abdomen was explored through a midline vertical incision; and the liver, gallbladder and other viscera were examined. The cyst presented through the gastrocolic omentum which was mobilized. A large tense fluctuating mass measuring about 9 x 11 cm. was found. The wall was not adherent to the posterior wall of the stomach except at the region of the lesser curvature. A longitudinal incision about 2.5 to 3 cm. in length was made through the cyst wall, which was quite thick and pliable. About 750 cc. of dark brown fluid was aspirated. 1 x 2 mm. of the cyst wall was removed for biopsy. Careful inspection of the cystic cavity was carried out for any neoplastic component, loculation and site of any communication to the primary ductal system. None was found. Brownish residue in the cyst cavity was sent to the laboratory. Another parallel longitudinal incision of similar length was made through the posterior wall of the stomach. A two-layer anastomosis of cystogastrostomy was done. A penrose drain was inserted into the lesser sac and brought out through a separate stab incision and anchored to the skin. The defect in the gastrocolic omentum was closed loosely around the drain. The patient had an uneventful convalescence. The drain was removed on the third postoperative day.

Pathology reports: The cystic fluid amylase was 1120 SU. The cyst wall was composed of dense fibrocollagenous tissue lined by a layer of flattened mesothelial-like cells. The cyst residue showed amorphous grumous material with numerous cholesterol crystals.

Diagnosis: Pancreatic pseudocyst wall.

Serial upper gastrointestinal tract X-rays were taken at one month postoperatively (Fig. 2), six

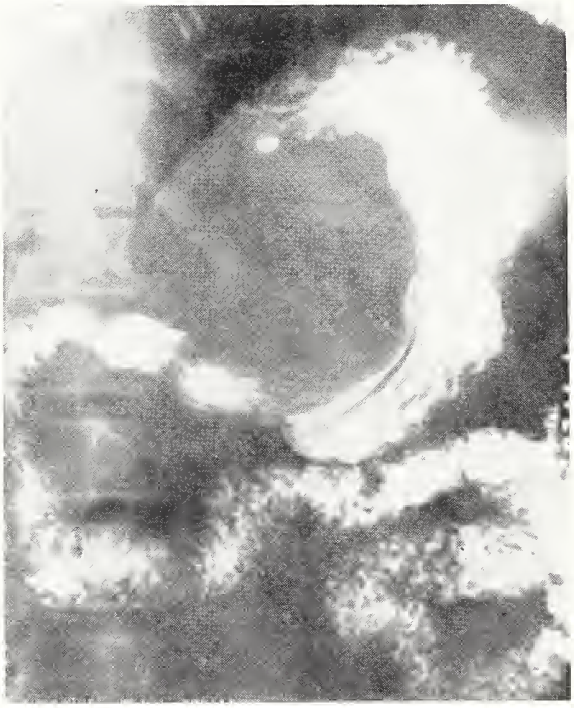

Fig. 1 Upper gastrointestinal tract barium meal reveals a large tumor mass measuring about 9 x 11 cm. displacing the stomach laterally and possibly anteriorly, and encroaching upon the lesser curvature with a definite pressure defect. It is compatible with a pancreatic cyst.

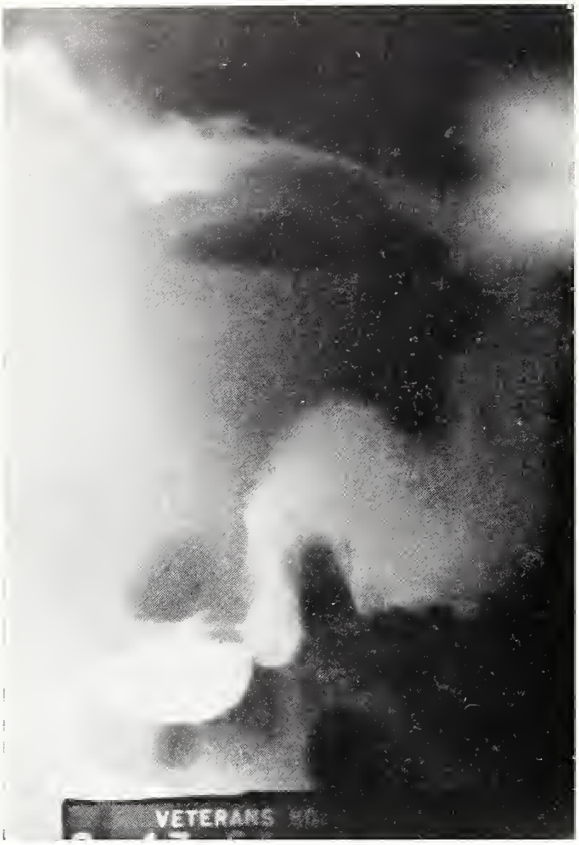

Fig. 2 One month postoperatively: X-ray reveals the stomach showing an extrinsic pressure defect visualized mainly on the lesser curvature side of the stomach in the region of the fundus. An air-fluid level representing the previously reported cyst lying in this area. It measures about 5 x 9 cm. No evidence of barium reflux into the cyst.

months (Fig. 3), nine months (Fig. 4), and 14 months (Fig. 5).

Discussion

Most books on surgical techniques and case reports mention the transgastric route as the procedure of choice. It is the opinion of the authors that it is safer to inspect the cyst by opening the gastrocolic omentum and by direct vision inspect to see if the cyst wall is firmly adherent to the posterior wall of the stomach before the transgastric route is utilized. If it is only partially adherent, a transventricular and retrogastric method is used without opening the anterior wall of the stomach.

The question arises, "When does the cyst become obliterated after a cystogastrostomy?" Vickers *et al.*[9] reported a case of stomal closure in six weeks by fiberscopic visualization. Judd[10] states that one might expect the cyst to fill with food and continue to cause difficulty, but most often the cysts closed down within a few weeks in their series of 17 cases of internal drainage. The gastrocystic reflux could be explained by the creation of a large window in the posterior gastric wall for an anastomosis between the cyst and stomach. Howard and Jordan[2] state that if serial X-rays are obtained, the cyst cavity fills with barium for two or three weeks only. Probstein[11] reported a patient who died six months after cystogastrostomy of pulmonary embolism. The cyst area had been replaced by dense fibrous tissue, and all that remained of the cyst cavity was a narrow tract with a tiny opening in the gastric mucosa. Warren *et al.*[12] mentioned that obliteration of the cyst was by no means rapid and required from six to twelve weeks.

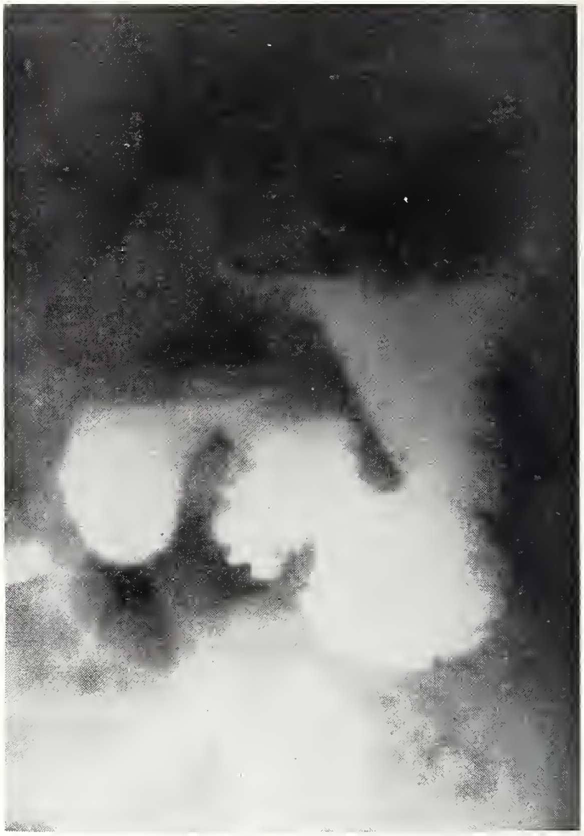

Fig. 3 Six months: Air-fluid level representing a residual cyst measuring about 2 x 5 cm.

Does gastrocystic regurgitation of food occur? It does if the incision is too long (6.5 cm.) or if too large an ellipse of juxta stomal tissue is excised. It is better to make the stomal opening about 2.5 to 3 cm., and avoid excision of juxta stomal tissue. If needed, only the smallest piece adequate for microscopic examination should be taken of the juxta stomal tissue. Warren *et al.*[12] have confirmed these findings in experi-

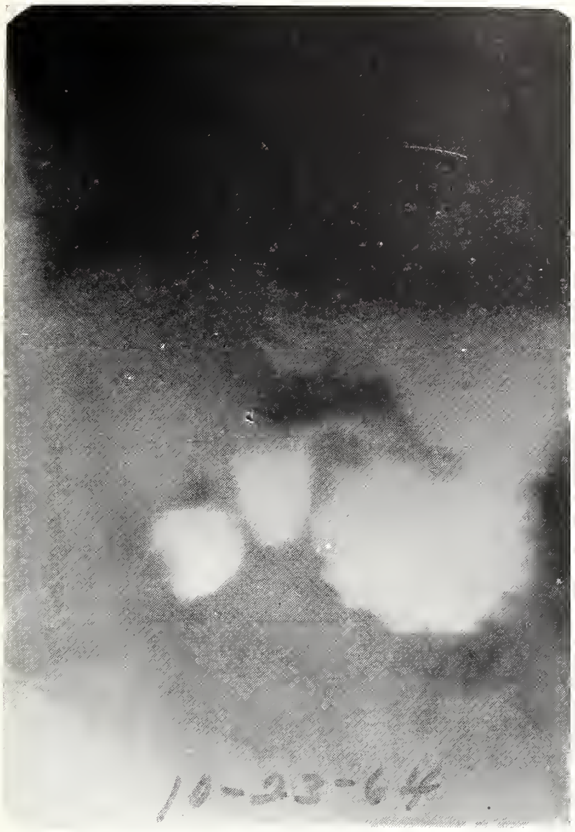

Fig. 4 Nine months: Air-fluid level representing residual cyst measuring about 1 x 2 cm.

ments on dogs after experimentally producing pseudocysts of the pancreas. If the stomal opening is between 2.5 to 3 cm. and no excision of juxta stomal tissue is taken, the infolding of gastric mucosa forms a valve-like structure which tends to prevent reflux of gastric content into the cyst.

Conclusion

A case of healing of a pancreatic pseudocyst following cystogastrostomy is presented. It healed in 14 months as evidenced by serial roentgenography. There is no evidence of reflux into the cyst. Gastrocystic reflux does occur, but it can be minimized if the stomal opening is between 2.5 to 3 cm. and excision of juxta stomal tissue for biopsy is avoided. The cyst wall is usually thick and pliable and holds sutures well, unless it is calcified, which is unusual. Before transgastric cystogastrostomy is carried out, direct visualization of the cyst should be performed by opening the gastrocolic omentum to see whether the cyst is adherent to the posterior wall of the stomach. If the cyst is only partially adherent, a transventricular and retrogastric anastomosis can be carried out. Either transgastric or transventricular and retrogastric cystogastrostomy is a simple form of internal drainage for the surgical treatment of pancreatic pseudocyst. They are commonly accepted as accomplishing adequate decompression and the ultimate obliteration of the cyst cavity, and at the same time permitting reabsorption of fluids, electrolytes and pancreatic enzymes into the gastrointestinal tract.

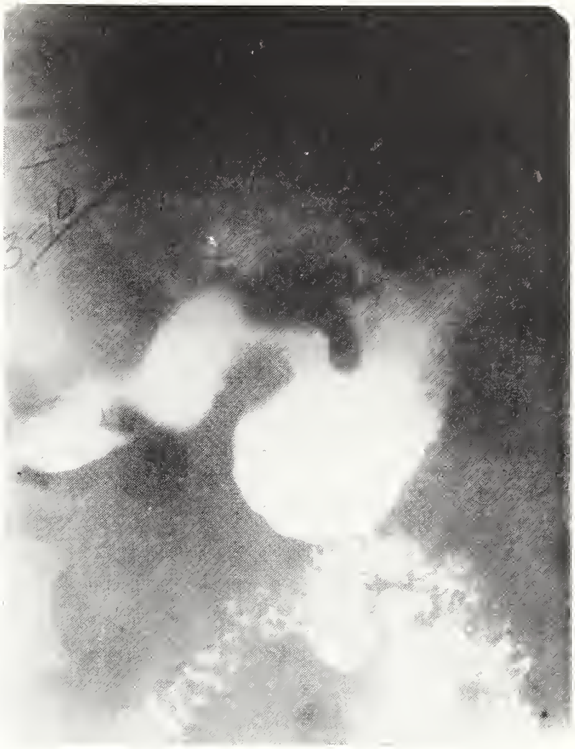

Fig. 5 Fourteen months: No evidence of any air-fluid level indicating the absence of any residual cyst in the area of the upper left quadrant.

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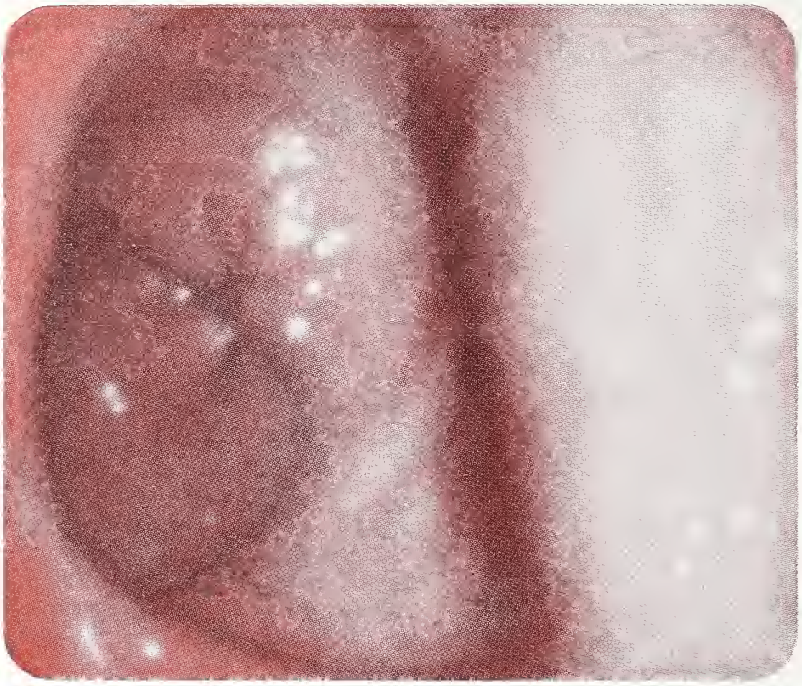
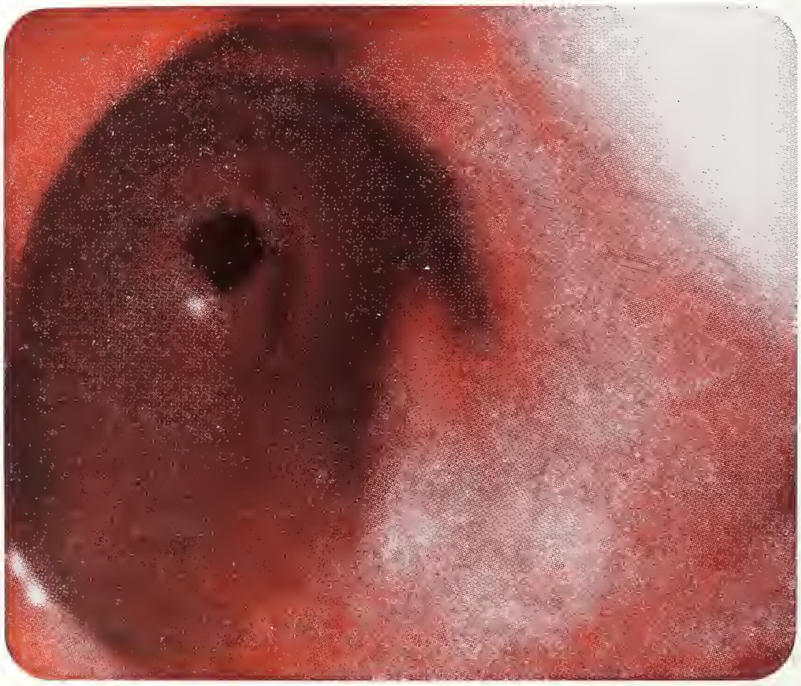
Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



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1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

ROBERT PAINE, M.D., ***St. Louis***

The Nervous System and the Heart

Part IV

The last of four installments of an extensive review covering the physiologic relations of the nervous system and the heart. The author has described the effects of cardiac denervation, the consequences of sympathetic and vagal motor stimulation, the various factors involved in cardiac activity regulation and the possible modification of neuro-cardiac processes by pharmacologic means. References and illustrations have been numbered consecutively through all four installments as an aid to those who may wish to retain the entire work as a unit.

Doctor Paine is Chief of the Department of Medicine at St. Luke's Hospital and Assistant Professor of Clinical Medicine at Washington University School of Medicine.

CARDIAC ALTERATIONS INDUCED BY NEURAL AND VISCERAL DISORDERS

CLINICAL COUNTERPARTS of the experimental neurogenic cardiac stimulation described in previous sections have been documented by many observers. Multiple electrocardiographic changes[152] after subarachnoid hemorrhage have been seen. Wandering atrial pacemaker,[24] nodal rhythm,[139] nodal premature contractions, ventricular premature contractions,[101] U wave abnormalities,[153] Q-T prolongation,[154] S-T deviations,[53] and T wave abnormality[38] were recorded among 29 patients. Another group of patients affected by cerebral vascular accidents[155] has presented Q-T prolongation, inversion of T waves and prominent U waves. When compared with normal controls and with patients suffering traumatic injuries other than head injury, patients with cranial damage have frequently shown increased amplitude of pathologically inverted T waves and prolongation of Q-T interval. Responses exhibited as frequently in non-neurologic trauma included increased QRS voltage, S-T elevation in V leads, T inversion in V leads, large U waves, sinus arrhythmia and wandering atrial pacemaker. Instances of atrial fibrillation[156, 157] and premature contractions have been reported after head injury. The variety of neural disease incriminated in production of electrocardiographic abnormalities has been large, ranging from trauma to tumor, and a variety of inflammatory processes.[143, 158]

Although neural influences upon coronary blood flow have been recognized, the observed neurogenic electrocardiographic alterations do not necessarily imply an ischemic mechanism. Direct modifications of individual cell action potentials by sympathetic action have been described above.

As noted the terminal portions of the action potential of the ventricular myocardial cells are susceptible to neurogenic alteration. Correlation of single-cell electrical phenomena with the electrocardiographic records of the intact heart has been described as follows:[159] (Fig. 14).

The composite electrical events in a segment of ventricular wall may be reduced schematically to a pair of cells, (A) lying in the subendocardial, and (B) a more superficial cell. When their action potentials have been placed in normal temporal sequence the relation of the initial upstrokes to the QRS complex is evident. Likewise the relation of the T wave to the terminal events is apparent. Upon sympathetic stimulation and upon change in rate the increased slope of the terminal phase may result in modification of T waves. As illustrated, the resultant amplitude of the T would be increased and its duration reduced. As noted above, neurogenic acceleration of intra-myocardial conduction has been measured. The foreshortening of interval between action potential inscriptions would elicit a diminution of T wave while influencing QRS voltage and duration as well.

Hemodynamic effects of clinical neurological disorders have been suggested by the dramatic observation of acute pulmonary edema following intracranial hemorrhage,[160] head injury,[161] encephalitis,[162] tumor,[163] multiple sclerosis, hypoglycemia and a variety of other central nervous system disturbances.

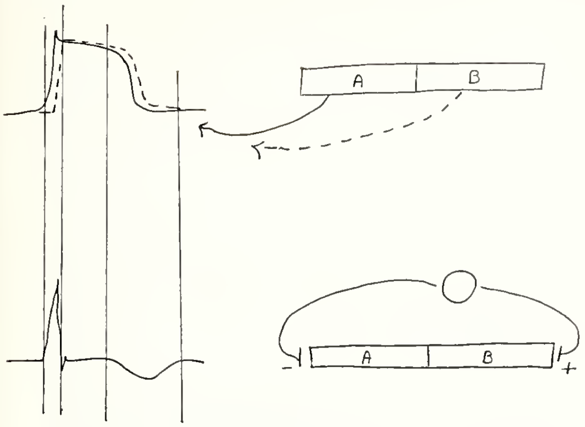

Fig. 14 (a) Neurogenic effects upon schematic two-cell myocardium. Cell A: Subendocardial, indicated by solid line. Cell B: Subepicardial, indicated by dotted line.

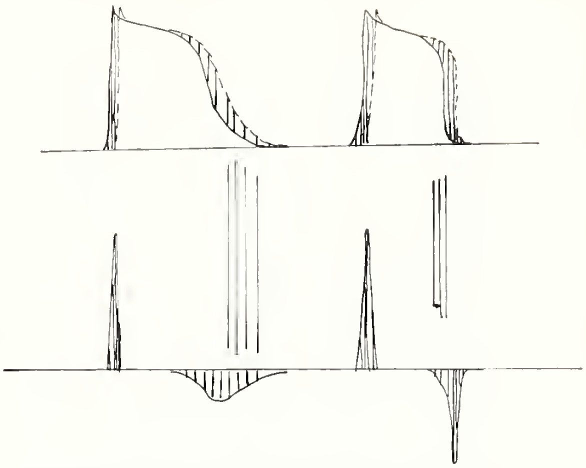

Fig. 14 (b) Tracing derived from summation of A.P.'s of "A" and "B" or recorded by bipolar galvanometer. Demonstration showing effect of sympathetic stimulation. Note the effect of alteration of slope of terminal phase of action potential upon configuration of T wave.

Of 686 patients dying between 30 and 60 minutes post-hemorrhage, two thirds were found to have edema of the lungs. Similar experience has been reported by many others. Among 80 autopsied patients dying of major nervous system disease including brain tumor,[56] cerebral hemorrhage,[136] cerebral thrombosis,[132] an amyotropic lateral sclerosis,[139] poliomyelitis and peripheral neuritis, 39 presented edema of the lungs at post mortem examination. While these cases with severe pulmonary congestion were often afflicted with organic cardiac disease or hypertension of unknown duration and the overall incidence of lung edema was no higher in those patients with neurological disease than in 57 individuals dying without intracranial pathology, striking incidents of massive pulmonary edema in the absence of cardiac pathology were noted among the neurologic patients.[163] The conclusion that neural influences may overtax the heart, especially in the presence of chronic cardiac disease or acute hypertension seems inescapable.

Neurogenic pulmonary edema has been produced experimentally in a variety of ways. The induction of intracranial hypertension by inflation of an extradural balloon in dogs, has evoked bradycardia, diminished cardiac output, pulmonary congestion and edema in the presence of variable systemic blood pressure. Atropine has abolished these effects.[160] Epinephrine administration has been an effective precipitant in dogs with experimental cardiac disease and much less frequently in animals with normal hearts. Cerebral embolism has regularly provoked arterial hypertension and bradycardia in normal dogs with occasional pulmonary congestion as well. When myocardial performance has been previously embarrassed by aortic valvulotomy, cerebral embolism was followed by striking cardiac dilatation and elevation of left atrial and pulmonary arterial pressure. Lung biopsies revealed intense transudation. In each instance pulmonary edema was preceded by evidence of myocardial dilatation and pulmonary congestion.

Visceral Reflexes and the Heart

It is a common clinical experience that gastrointestinal disorders aside from hemorrhage may be reflected in altered blood pressure or in severe disturbances of cardiac function. Therefore, it might be expected that a variety of irritants applied to the gastrointestinal tract would have elicited striking electrocardiographic changes. Inflation of intestinal loops to 40-80 mm. Hg. has provoked minor changes in normal animals, while nine of 40 animals with experimental myocardial damage developed marked electrocardiographic changes.[164] Acetylcholine applied to the intestinal mucosa precipitated T wave inversion and premature contractions in 12 of 25 cats with experimental myocarditis after showing no effect in normal preparations.[165, 166] Normal persons exhibit minor changes after ingestion of mustard capsules, although 22 of 33 individuals suffering with coronary disease revealed marked S-T, T abnormalities.[167]

These observations do not necessarily implicate the coronary circulation in the pathogenesis of the electrocardiographic abnormalities for reasons given above. The following experiments, however, suggest a hemodynamic factor.

Coronary flow has been found to diminish after experimental distension of the stomach or gallbladder[38, 146, 148, 168, 169] with or without fall in systemic blood pressure. After stimulation of the intact vagus below the heart along the esophagus and stomach, coronary sinus flow, determined by Morowitz cannulation in 13 experiments, decreased in one instance and increased in 12 despite a diminished or unchanged systemic blood pressure in six.[37] Stimulation of the proximal end of the cut vagus at this level produced similar coronary flow alterations, as did irritation of the splanchnic. When nerves around the cystic and common bile ducts and celiac vessels were stimulated, coronary flow paralleled aortic pressure variations. Upon distension of the stomach and gallbladder in one instance among 11 observations, there was a reduction in coronary flow.[170] Atropine has abolished the restriction of myocardial flow after gastric distension.[168]

Performance of the Levy anoxemia test had elicited pain 18% to 40% more rapidly after a meal than during a fast,[168] an alteration abolished by atropine.

Pharmacologic Manipulation of Myocardial Catecholamines[171-176]

In dogs intravenous administration of guanethidine has evoked elevation of systemic blood pressure, tachycardia, increased myocardial contractile force followed by hypotension and diminished myocardial vigor. Coronary venous catechol content initially has risen from .21 μg/l in excess of arterial blood concentration in resting state to 1.23 μg/l two minutes after injection; 1.0 μg/l, 15 minutes after; 0.42 μg/l, 60 minutes; 0.45 μg/l, 120 minutes; –.08 μg/l, 180 minutes; and –.063 μg/l, 240 minutes after injection. Atrial myocardial content has decreased from 2.14 μg/g to 1.6 μg/g 4 hours after injection. These observations have suggested a release of catecholamine from the myocardium by guanethidine with transient pressor effects succeeded by evidence of myocardial weakness.[177]

Reserpine injected intravenously has precipitated a similar though milder alteration in myocardial catechol content and vigor, with an unexplained progressive disappearance of myocardial amine without continued loss into coronary

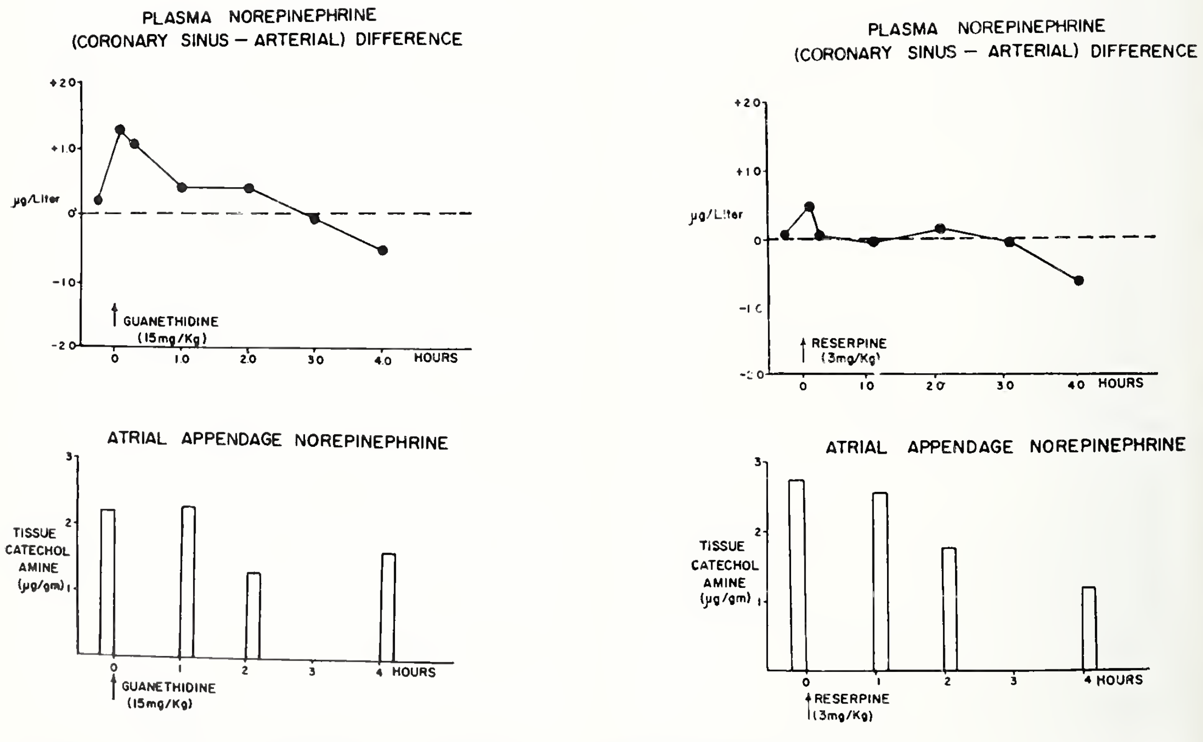

Fig. 15 Effect of guanethidine and reserpine upon catecholamine content of myocardium and coronary venous blood.[20]

venous blood, suggesting destruction of the amine within the myocardium (Fig. 15).

Depletion of norepinephrine stores by these two agents has obliterated the normal pressor response of those amines dependent upon release of norepinephrine. Tyramine, ephedrine, amphetamine have regained their potency in reserpine-treated animals after epinephrine or norepinephrine was injected.[178]

Speculation

Neural cardiac control mechanisms may be relevant to many familiar cardiovascular phenomena.

Older observations describing the precipitation of atrial fibrillation by vagal activity may reflect the sinus and atrial cellular behavior described above. As noted, sinus nodal cells have evidenced the greatest suppression of diastolic depolarization during vagal excitations. Pacemaker cells scattered elsewhere in the atria, less affected by vagal stimulation, should therefore possess an increased chance of reaching threshold during sinus inhibition. There being numerous potential pacemakers, the possibility of multifocal atrial rhythm would be expected to be great. In addition the foreshortening of atrial action potential and refractory period would facilitate such a state of multicentric arrhythmia.

The clinical usefulness of vagal stimulation in terminating atrial tachycardia contrasts sharply with the ineffectiveness of such stimulation in atrial fibrillation. If atrial rhythm arises from a single ectopic focus, vagal suppression of cellular diastolic depolarization should interrupt the ectopic focus leaving the area to the sinus nodal cells. *On the other hand, vagal influence upon multiple discharging centers might alter the rate of each but produce no quiescent interval for the entry of dominant sinus rhythm.*

Patients experiencing extrasystoles frequently complain of an abrupt weak, warm or "all gone sensation." These may be the counterparts of the abrupt reduction in peripheral resistance demonstrated in the investigation of intracardiac receptors. During those observations the occurrence of extrasystoles was found to produce an abrupt relaxation of peripheral resistance. These sensors may play a more violent role in the syncopal attacks experienced by patients with aortic stenosis, where abrupt elevation of left ventricular pressure during exercise or from a variety of other causes could be responsible for potent vasodilatory and cardio inhibitory reflexes.

The described investigations of the carotid sinus complement nicely the observed increased frequency of carotid sinus hypersensititivity in the aged, where the atheromatous process might magnify distortion of the sinus walls and engender increased stretch response. General loss of vascular elasticity with heightening of pulse pressure in atherosclerosis would also facilitate sinus response.

Classical chronotropic effects of digitalis may relate not only to relief of atrial distension and to suppression of hypoxic chemoreceptor stimulations by restoration of compensation, but may result as well from left ventricular receptor activity stimulated by increased myocardial systolic contraction with reflex initiation of vasodilation and bradycardia. At least one investigator has obliterated digitalis slowing by interrupting vagal *afferents* in the chest.

The effectiveness of guanethidine and reserpine in the suppression of hypertension may be, in part at least, due to the exhaustion of myocardial catecholamines. The recent description of reserpine-aggravated myocardial failure is a predictable result of such a change in myocardial strength carried to excess. Also the bradycardia often induced may reflect the changes in pacemaker cell polarization induced by epinephrine-norepinephrine depletion.

On the other hand, control of cardiovascular components of thyrotoxicosis by reserpine correlates well with the discovery of excessive myocardial catecholamine in hyperthyroid animals.

If the ventricular and atrial pressor receptor apparatus were vulnerable to ischemia, a pathologic response might play a significant role in the precipitation of vascular collapse subsequent to myocardial infarction. The recording of afferent vagal electrical activity during experimental coronary occlusion would be of interest. To the author's knowledge this type of observation has not been recorded.

Disturbance of myocardial catecholamines during ischemia could be a factor in the hypodynamic state of the hypoxic myocardium and in the genesis of arrhythmias.

The possibility that exhaustion of myocardial sympathetic substance is related to deterioration of the chronically failing heart has been suggested by demonstration of catechol depletion in the decompensating heart-lung preparation and in congestive heart failure.

Summary

The influence of the nervous system upon the heart has been reviewed. Following a description of the effects of cardiac denervation, the consequences of sympathetic and vagal motor stimulation upon myocardial performance, coro-

nary flow, individual cell and biochemical phenomena have been explored. The regulation of cardiac activity by medullary, hypothalamic, cerebellar and cortical activity and by the cardiac sensing apparatus has been described.

The clinical counterparts of experimental neurogenic cardiac behavior, and the pharmacologic modification of the neuro-cardiac processes have been discussed.

Acknowledgement: The author wishes to express his gratitude to Doctors John R. Smith and Carl V. Moore for valuable criticism and encouragement; to Mrs. Florence Maltagliati for tireless preparation of the manuscript; and to the Department of Illustration of the Washington University Medical School for the reproduction of illustrations.

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Carcinoma of the Tonsil (con't.)

grounds and preliminary observations we are hopeful of a significant enhancement of survival rates.

SUMMARY

Following radiation therapy, a 44.5% cure rate has been obtained in 27 consecutive patients treated for epidermoid carcinoma of the tonsil. The signs, symptoms and characteristics of the disease are briefly reviewed. It is felt that in similar patients the survival rate can be significantly increased by application of preoperative irradiation followed by surgical excision of the lesion.

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J. S. SANDERS, M.D., ***Jefferson City***

Hypokalemia Due to Renal Tubular Acidosis

Case Report

HYPOKALEMIA, SEVERE ENOUGH to cause extensive paralysis, has occasionally been reported as a complication of renal tubular acidosis.[1, 2] Although muscular weakness secondary to this condition progresses gradually in most cases, the most severe manifestations may develop rapidly. Because of this and the very low serum potassium values sometimes found in renal tubular acidosis, early diagnosis is important if respiratory muscle paralysis and lethal cardiac arrhythmias are to be prevented. In our case several factors combined to make hysterical paralysis the most likely diagnosis at the time of admission. When hypokalemia was suspected, the patient was critically ill but responded to vigorous parenteral and oral potassium therapy over the next eight days. The purpose of this report is to emphasize the importance of considering hypokalemia as a cause of rapidly developing muscle paralysis, and to point out that the diagnosis of renal tubular acidosis can be established with reasonable certainty with the facilities available in most community hospitals. Correct diagnosis and subsequent maintenance therapy with suitable alkaline solutions may allow individuals with this condition to live normal lives if other renal or systemic abnormalities are absent.[3]

CASE REPORT

A 33-year-old white female was admitted with a history of weakness, nausea and frequent vomiting of one month's duration. She had been known for some time to be a very anxious individual, and it was felt that her functional symptoms were aggravated by increasing emotional stress in the immediate preadmission period. The vomiting sometimes occurred without nausea, and the patient stated that she was sometimes able to eat and retain food immediately after vomiting. Two days prior to admission she developed diarrhea, followed by the onset of more severe weakness, associated with polydipsia and polyuria.

There was no history of any known renal disease or hypertension prior to admission. Review of the family history revealed that one nephew, age 14 years, was diagnosed as having "nephritis." The patient had had three uncomplicated full term pregnancies prior to the onset of symptoms leading to her hospitalization.

Admission physical examination revealed the blood pressure to be 110/68, respirations 20, temperature 98.2, and pulse 64 and regular. The deep tendon reflexes were hypoactive and she exhibited signs of moderate dehydration. She demonstrated somewhat inappropriate affect and was hyperventilating. Otherwise, the examination was within normal limits. One liter of 5% dextrose in water was administered shortly after admission. The patient noted increasing weakness of all four extremities while this potassium-free solution was being administered. On the next day, the weakness progressed rapidly to paralysis of all four extremities. When the condition was discovered she was found to be quadriplegic with shallow respirations and cyanosis of the nail beds. The heart rate was 150 with a regular rhythm. Deep tendon reflexes were absent in all areas. Sensation to touch, pain and temperature were intact. An electrocardiogram was obtained immediately (Fig. 1). When changes strongly suggestive of hypokalemia were seen, blood was drawn for electrolyte studies and an infusion of 40 mEq of potassium chloride in 500 cc of 5% dextrose in water started immediately. The serum sodium and potassium were reported later as 135 mEq per liter and 1.8 mEq per liter, respectively. The patient was given a total of 600 mEq of potassium

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Report of a case of hypokalemic muscle paralysis due to renal tubular acidosis. The author emphasizes that this condition may produce rapidly developing paralysis with extremely low levels of serum potassium and that early diagnosis is important in preventing possibly lethal respiratory and/or cardiac involvement. Diagnosis, however, can be established with reasonable certainty with facilities available in most community hospitals.

Doctor Sanders is in the private practice of Internal Medicine and is Clinical Assistant Professor, University of Missouri School of Medicine.

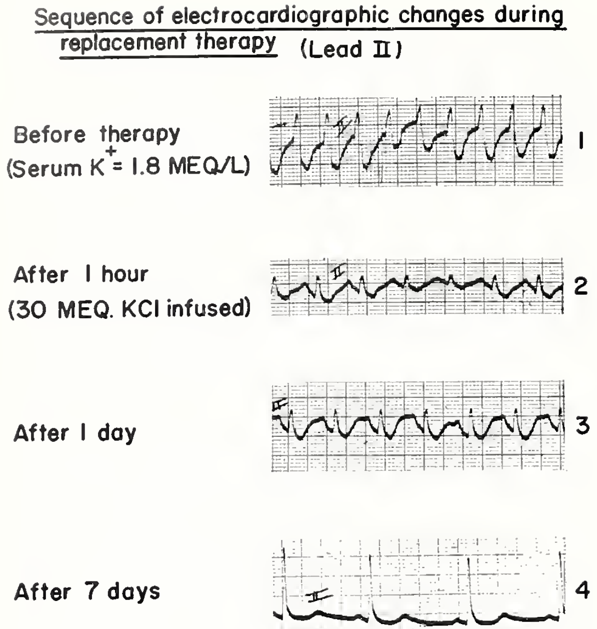


Fig. 1

chloride intravenously, along with potassium solution by mouth as tolerated, over the next eight days. This resulted in gradual return of muscle strength and improvement in her cardiac status. Renal tubular acidosis was not immediately suspected, but when serum bicarbonate values were persistently low (10.6-15.8 mEq per liter) and chloride values high (119 mEq per liter), while the urine pH was consistently higher than 6.5, it was felt that this was the most likely cause of the patient's hypokalemia.

After the patient's general condition improved and she was able to take fluid by mouth regularly, she was started on a solution containing sodium citrate, potassium citrate and citric acid in a proportion of 60 grams sodium citrate, 66 grams potassium citrate and 40 grams citric acid in syrup of cherry to make a relatively palatable solution of 600 cc. She was discharged from the hospital on this program and did well clinically for the next two months. However, because there was some difficulty in maintaining the serum potassium at normal levels and because the diagnosis of renal tubular acidosis had not been conclusively established, she was readmitted. Studies performed during this admission included: (1) measurement of potassium excretion while the patient was on a fixed intake of potassium, (2) serum pH, (3) repeated urine pH determinations and (4) serum determinations of potassium, bicarbonate, chloride, calcium, phosphorus and blood urea nitrogen.

During this admission the average daily potassium excretion on a diet containing 10 mEq. of potassium over a five day period was 76.9 mEq. At this time the serum potassium was 4.0 mEq per liter. The average 24-hour urine volume over this period was 3,490 cc, with the highest value being 4,320 cc. Specific gravity on 24-hour urine collections was invariably low (1.003-1.012). Intravenous pyelograms showed normal sized kidneys with no abnormalities in excretion except for dilution of the dye. This was presumably due to the poor urinary concentration secondary to the hyposthenuria of long standing hypokalemia.[4] Following the diagnostic studies and an increase in the dosage of the alkaline potassium solution, the patient was discharged. A summary of the electrolyte and pH determinations from the patient's hospitalizations and for 18 months thereafter are summarized in Table 1.

Since her last hospitalization, she has been completely asymptomatic. Electrolyte studies one year later were normal except for persistent hyperchloremia. The serum bicarbonate was below 20 mEq per liter at the time of the most recent electrolyte studies. This is probably due to the fact that the patient recently became pregnant and the associated nausea, which she has previously experienced in the first trimester, caused her to decrease the dosage of the citrate solution from 60 cc to 30 cc daily.

DISCUSSION

Skeletal muscle paralysis due to hypokalemia may be preceded by symptoms due to other effects of this abnormal metabolic state.[5] These include: polyuria, due to the effect of hypokalemia on the renal tubules; nausea, vomiting and abdominal distension, due to the effects on the smooth muscle of the gastrointestinal tract; cardiac arrhythmias and mental confusion.

Skeletal muscle paralysis is usually symmetrical and is accompanied by marked decrease or absence of deep tendon reflexes. Sensory manifestations are absent. Clinical differentiation between hypokalemia and hyperkalemia is sometimes surprisingly difficult, especially if the history is inadequate. Skeletal muscle paralysis may occur in both conditions. However, sensory symptoms (circumoral paresthesias) are present in severe hyperkalemia, and electrocardiographic changes are easily distinguishable in most cases.[6] The electrocardiogram in hypokalemia is characteristic and represents the most readily available method of establishing the diagnosis immediately when it is suspected clinically. Electrocardiographic changes usually occur in a predictable sequence in hypokalemia (Fig. 2).

The precise tubular abnormality responsible for renal tubular acidosis is unknown. The condition is characterized by inability to produce a high concentration gradient of hydrogen ion between urine and plasma, whereas a gradient of 800:1 is possible in normal individuals.[7] The absence of this ability results in production of systemic acidosis with a paradoxically alkaline

TABLE 1

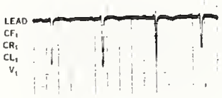
	Na (mEq/l) n = 135-145	K (mEq/l) n = 4.1-5.6	Cl (mEq/l) n = 96-109	CO_2 (mEq/l) n = 22-33	BUN (mg.%) n = 9-15	Ca (mEq/l) n = 4.3-5.5	P (mg.%) n = 2-4	Urine pH n = <5.9	Serum pH n = 7.35-7.45
First Admission									
second day (before therapy)	135	1.8							
eighth day	140	3.6	119	15.8	11	4.7	2.3	6.5-7.5	
Second Admission		4.0			9	4.8	3.4	7.0-7.5	7.25
12 Months Later	143	4.3	123	26.7					
18 Months Later	135	4.2	108	18.9	9	5.0	3.3	7.5	

Laboratory studies at time of diagnosis and for 18 months thereafter. Creatinine clearance during the second admission was 80 cc per minute.
(Na = serum sodium; K = serum potassium; Cl = serum chloride; CO_2 = serum carbon dioxide content; BUN = blood urea nitrogen; Ca = serum calcium; P = serum phosphorus.)

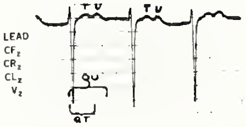
or neutral urine. Hypokalemia is a frequent complication because of the inability of the tubules to secrete hydrogen ion into the urine. The ion exchange mechanism, by which sodium is substituted for hydrogen ion or potassium ion in the proximal tubule, results in potassium being secreted into the urine in large quantities.

Although there is sometimes overlap between renal tubular acidosis and uremic acidosis, several distinguishing features are usually present in renal tubular acidosis.[8, 9] These include a normal urea nitrogen, urine pH consistently greater than 5.9, normal or near normal creatinine clearance, normal or decreased serum phosphate and the previously mentioned hypokalemia. Excretion of ammonium ion is usually normal or elevated in renal tubular acidosis while it is invariably depressed in uremic acidosis. Although hypokalemia may be present

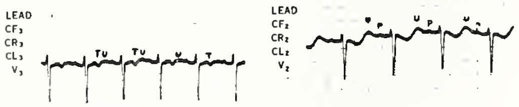
1) Lowering and broadening of T wave with slight prolongation of the QT interval.



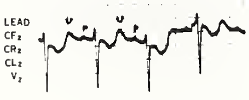
2) Low, broad T waves with increasing amplitude of U waves, thus giving appearance of a double summit. QU interval may be mistaken for QT interval.



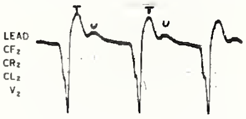
3) Biphasic or inverted T waves, associated with U waves and ST segment depression.



4) Accentuation of above findings with production of a very tall U wave.



5) Terminal hypokalemic state, with increasing duration of QRS complex, disappearance of P waves and slowing of rate (resembles pattern of Hyperkalemia.)



In addition to the above findings, prolongation of PR interval and various arrhythmias may occur such as: premature atrial or ventricular contractions, atrial flutter, atrial fibrillation.

Fig. 2 Usual progression of electrocardiographic changes in hypokalemia.

in uremic acidosis due to chronic renal insufficiency with a normal or high urinary output, the abnormality, if present at all, is rarely to the degree seen in cases of renal tubular acidosis.

Elkinton has classified renal tubular acidosis into primary and secondary types.[10] Primary cases are further subdivided into infantile and late types, the former being more common in males and the latter in females. Secondary types include Lowe's syndrome, DeToni Fanconi syndrome, Wilson's disease, chronic pyelonephritis and galactosemia. A recently discovered form of secondary renal tubular acidosis is that due to the use of outdated Tetracycline.[11, 12] Renal tubular acidosis in the secondary form is usually part of a more generalized abnormality of tubular function or is associated with metabolic disorders involving other tissues. Nephrocalcinosis and osteomalacia are frequently, but not invariably, present in late primary renal tubular acidosis.[8, 9] The principal findings that should always lead to a strong suspicion of renal tubular acidosis are: (1) metabolic acidosis (low serum bicarbonate and low serum pH), (2) normal blood urea nitrogen, (3) alkaline or neutral urine (pH consistently above 5.9 on an average diet with inability to go below 5.5 after loading with ammonium chloride) and (4) typical electrolyte abnormalities (hyperchloremia, hypokalemia, hypocalcemia). More complicated diagnostic tests of renal function have been developed, such as hydrogen ion clearance indices and paper chromatographic studies of urine to determine amino acid content.[10, 13] These studies, when they can be performed, help to conclusively establish the diagnosis and to aid in our understanding of this unusual condition, the precise etiology of which is as yet undetermined. It is anticipated that the patient will agree to hospitalization for studies of this type in the near future. However, the facilities of a Medical Center are necessary for the performance of these tests and they are not essential for the diagnosis and treatment of the acutely ill patient. If the patient is to survive when severe hypokalemia is present (1.8 mEq per liter in this case), corrective therapy must be instituted as soon as possible.

SUMMARY

A case of severe hypokalemic muscle paralysis is presented which is believed to be due to late primary renal tubular acidosis. The patient was treated immediately with high concentrations of potassium solutions intravenously and later with alkaline potassium containing solutions orally. She has done well on this program and has demonstrated no deterioration in renal function. The most important diagnostic features are (1) metabolic acidosis, (2) persistently alkaline or neutral urine, (3) normal blood urea nitrogen and (4) electrolyte abnormalities (hyperchloremia, hypokalemia, hypocalcemia). It is pointed out that the diagnosis of this condition can be reasonably well established with the facilities available in most community hospitals.

Acknowledgement: Our sincere thanks to Dr. Harold Kanagawa, Sr., for permitting us to use this patient as the subject of a published case report.

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Keep your *Missouri State Medical Association* file up-to-date. Remove the easy-to-pull-out center section in this issue of MISSOURI MEDICINE. It contains the latest revision of the Association's Constitution and By-Laws. Keep your *Missouri State Medical Association* file up-to-date.

An antidepressant designed for the clinical realities of office practice

As many physicians have reported, the large majority of neurotic depressed patients suffer from both depression and anxiety. It may be difficult to decide whether these patients are primarily depressed or primarily anxious. And yet drug treatment of only the symptom which seems more prominent may exacerbate the untreated element of the depression complex.

Consequently, it would seem that therapy specifically aimed at both the depression and associated anxiety and tension should increase success in treatment.

This is one of the important reasons why 'Deprol' has proved particularly helpful. For 'Deprol' acts rapidly both to lift the mood and to relieve the associated anxiety, tension and insomnia.

And side effects, at recommended dosage, have been infrequent and generally readily controlled.

Indications: 'Deprol' is useful in the management of depression, both acute (reactive) and chronic. It is particularly useful in the less severe depressions and where the depression is accompanied by anxiety, insomnia, agitation, or rumination. It is also useful for management of depression and associated anxiety accompanying or related to organic illnesses.

Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

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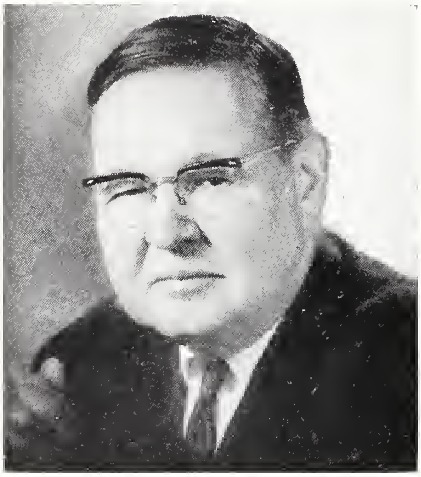


Paul R. Whitener, M.D.

President's Message

At the meeting of the MSMA Council on October 2, 1965 the resignation of Tom O'Brien as Executive Secretary of the Association was regretfully accepted. Tom has served the Association and the medical profession for more than a score of years, and we all are sorry that he is now forced to reduce his physical activities. We are happy, though, that he will be able to continue to serve in a less active role as Executive Assistant.

The one bright spot in this story is that the other member of the "twins," Ray McIntyre, stands ready and able to assume the responsibilities of Executive Secretary. Other changes in the Executive Office are being made, and they will be announced in due time.

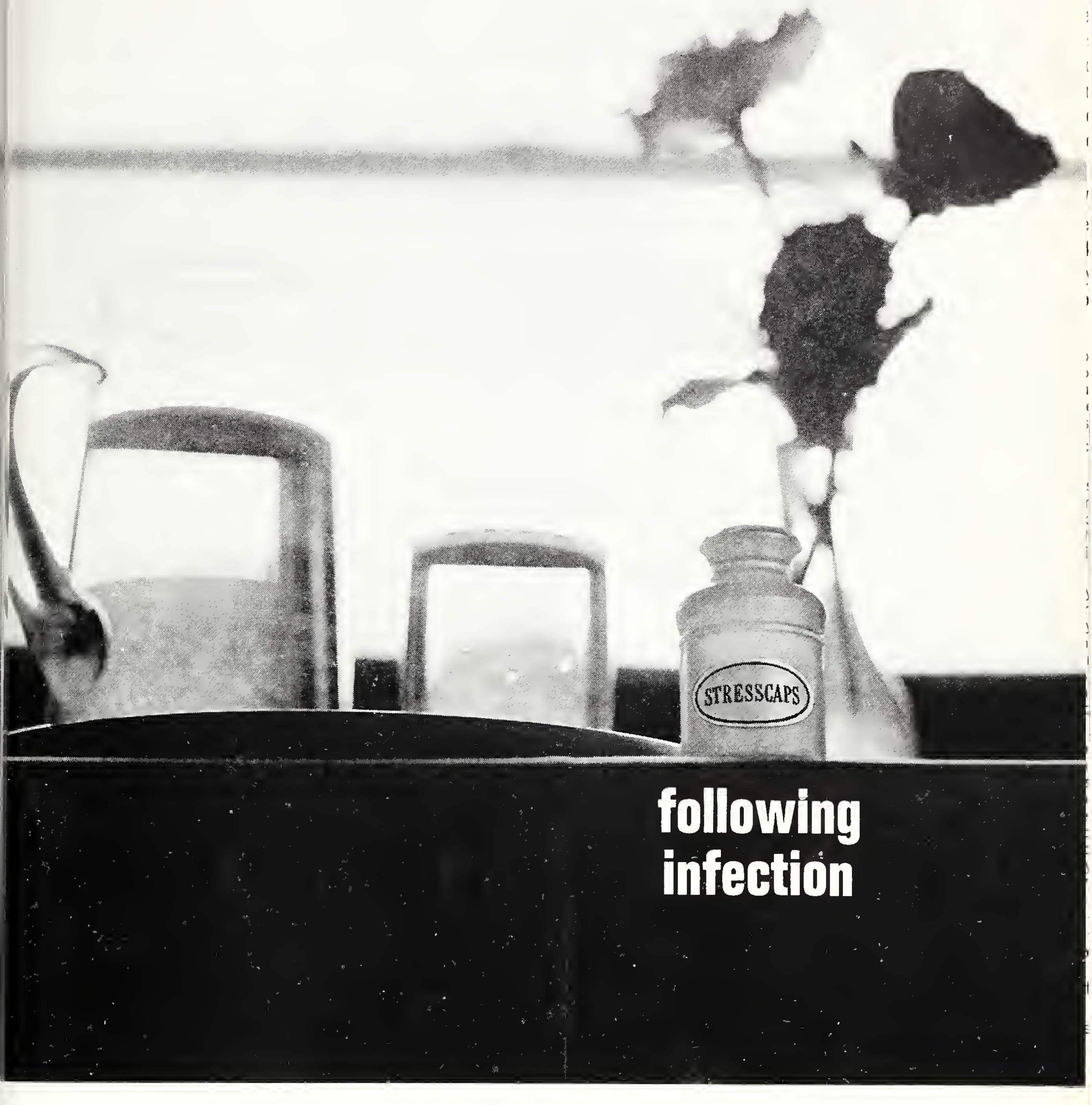
Recently we saw a demonstration of what can be accomplished by united action. The entire profession joined forces to keep four physician-specialty groups from being lumped in with "hospital services" under "medicare." The ancient strategem of "divide and conquer" is still effective, but in this case it didn't work because we refused to be divided. In the months and years ahead, the profession . . . represented by the AMA, MSMA and your local medical society . . . will be faced with new threats and new challenges. Those who would make medicine subservient to politics will again attempt to conquer by dividing.

I appeal to all Missouri physicians to give their whole-hearted support to the medical organizations which represent all physicians. Don't be deluded into believing that you can strengthen our position by piling fragmentation upon fragmentation.

The physicians of this country might well remember that time-worn warning given by Ben Franklin nearly 200 years ago.

"We must all hang together, or assuredly we shall all hang separately."

Paul R. Whitener M.D.



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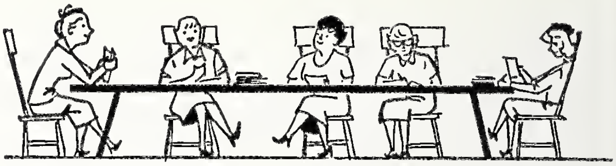
Woman's Auxiliary



Greetings and a Happy Thanksgiving to all of you! As I write this late in September, I am trying to project my thoughts to include the busy October ahead.

September has not lessened my activities. I have had no time to fritter away, getting Carol off to her Junior year in music at K. U. and helping Jim start his Senior year in high school as captain of the football team. Auxiliaries, please note: No visits from your state President on Fridays!

Mrs. R. W. Bohnsack

I have just completed a three-day trek to visit the Cape Girardeau, Perry-Ste. Genevieve, and Mineral Area Auxiliaries, and enjoyed lovely luncheon meetings with each group in spite of the rainy weather. Since my husband accompanied me for a few days of rest, Marjorie Nunnelly and her husband of Cape Girardeau also planned a lovely dinner party for us that evening. Everyone treated me like royalty and I am most grateful.

All of the groups of the Tenth District are enthusiastically helping Butler-Ripley-Wayne with some phase of our Fall Conference—our HOOTENANNY FOR HEALTH! By the time you read this, it will be only a memory, but hopefully, it will be an inspiration for great accomplishments by your auxiliary. A big "thank-you" to our hostess group for their untiring efforts and to all who participated in the program in any way! It was a pleasure to have Dr. Whitener bring us greetings from our MSMA and to have so many doctors at our dinner and luncheon.

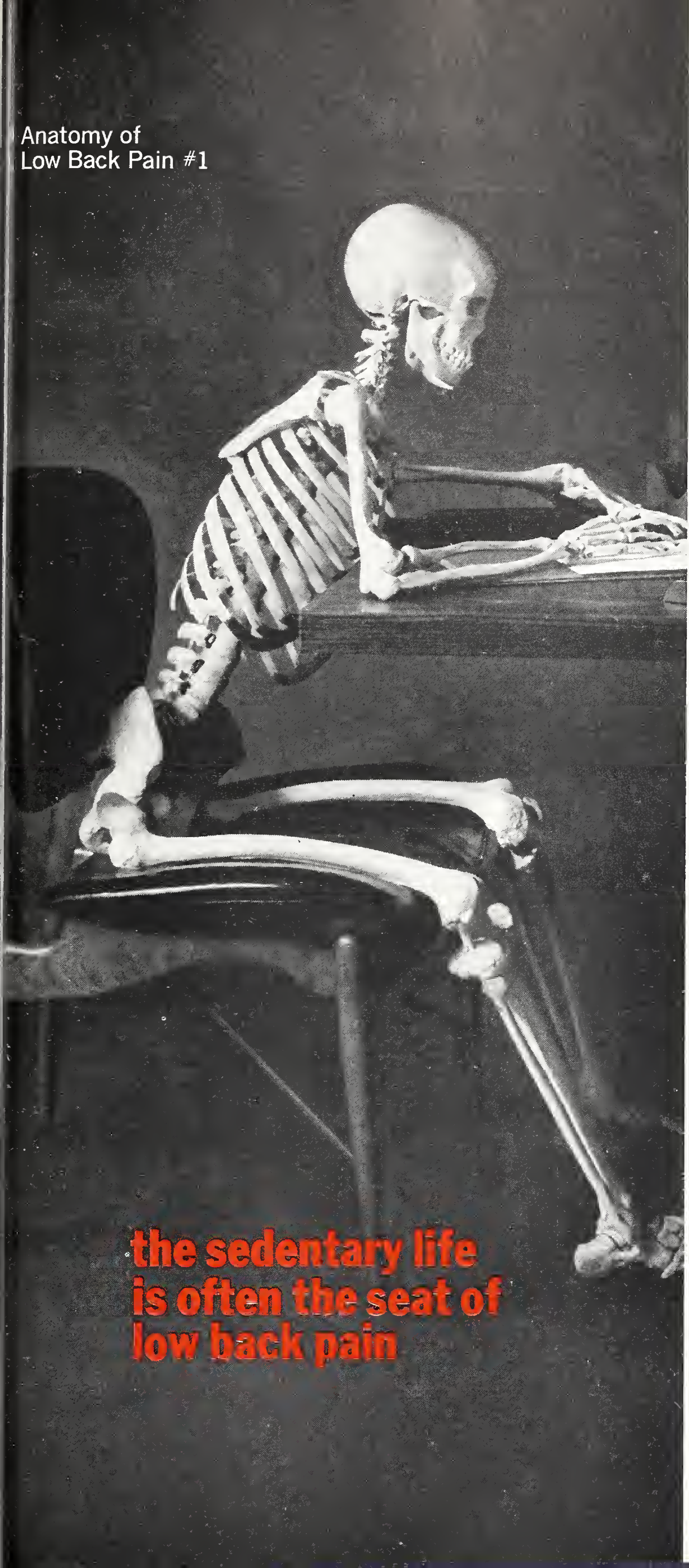
I am wondering if you doctors are using these willing and capable auxiliary members, this "tremendous scarcely-tapped reservoir of volunteer power, just waiting for their medical societies to invite them to join the team. As we are 'auxiliary to' and not independent, we must depend on you 'pros' for advice, counsel and guidance!" The preceding quote was taken from Betty Sutter's presentation before the AMA-PR Conference in Chicago in August. I couldn't resist quoting it because she always seems to say, in such an appropriate way, the things I think.

On September 27, I attended a luncheon in the home of Ruth Anne Jones, Johnson County president; followed by a tea in the home of Mary Lou Lederer at Warrensburg. The Lafayette-Ray auxiliary was also invited and it was a most delightful affair. I was honored that there were three Past-Presidents present: Mrs. Wilfred E. Martin of Odessa, Mrs. W. E. Koppenbrink, Sr., of Higginsville, and Mrs. Jordan Kelling of Waverly.

October 10-14 will find me in Chicago attending the National Fall Conference and Regional Workshop with our own Betty Sutter, our National President, at the helm. Wilda Stacey, our Missouri President-Elect, will also be there. Florence Guhleman, our state Mental Health chairman, Jane Stewart, our Membership chairman, and Anna Whitman, our AMA-ERF chairman, will attend the Workshop portion. We should all have much fine material to bring to our own Fall Conference.

I am pleased that Betty Sutter asked me to present a paper on a "Missouri Community Service Guest Day" (specifically, St. Louis County) which has been so successful. Venus Schattyn was kind enough to do the research work. Only two counties were chosen to report on these "How-to Programs for Guest Day Meetings": Camden County, New Jersey, which has had as many as 1,400 at such a meeting, and St. Louis County which has drawn 500. This is one way auxiliaries can give medical societies an entry into other groups! County auxiliaries and medical societies, take note!

I am receiving quite a few year-books from the various county auxiliaries. It is fun to see just how each one chooses to carry out our theme, ACCENT ON PROGRESS, putting into practice in their own communities the projects which our national and state auxiliaries, with the advice of our medical societies, try to inspire to help the cause of medicine and better health in each city, county, state, nation and the world. If the people of your community don't have a burning desire to see this a reality, maybe you can light a fire under them. Don't let any warm idea freeze to death! Good luck and God bless you.



The human spine is not engineered fo prolonged sitting at desks, pianos, typewriters and drafting boards. The stresse set up by the heavy, forward-tilted hea and trunk, balanced precariously on a insufficient base, result in strain of th dorsal musculature, particularly at th low lumbar level.

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Contraindications: Allergic or idiosyncratic reactions to carisoprodol.

Precautions: 'Soma', like other central nervou system depressants, should be used with cautio in patients with known propensity for taking excessive quantities of drugs and in patients wit known sensitivity to compounds of similar chemical structure, e.g., meprobamate.

Side Effects: The only side effect reported with an frequency is sleepiness, usually on higher tha recommended doses. An occasional patient ma not tolerate carisoprodol because of an individua reaction, such as a sensation of weakness. Othe rarely observed reactions have included dizziness ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, an gastrointestinal symptoms.

One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodo and subsequent cross reaction to meprobamate Rare allergic reactions, usually mild, have include one case each of anaphylactoid reaction with mil shock and angioneurotic edema with respirator difficulty, both reversed with appropriate therapy In cases of allergic or hypersensitivity reactions carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respirator depression.

Dosage: Usual adult dose is one 350 mg. table three times daily and at bedtime.

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EDITORIALS

THE MAGIC FORMULA

A week or so ago, a man reached fame and success. We congratulate Sandy Koufax on his achievement in the world of baseball. We are sure that if he were asked how he achieved this success, he would probably attribute it to work . . . work . . . and more work. Some reporter might try to give some magic method to make a story, since work has never been very glamorous. Koufax's "natural athletic talent" sounds good.

Medicine has received a legal change as to the mode in which it is to practice. There was a great deal of effort by some to combat this change. Others apparently could care less. We raise the question as to whether these latter physicians are not the victims of their own methods. Today in Medicine, there seems to be a shot . . . an injection . . . a pill for almost any disease or illness. It is almost as if, *by magic*, the illness is cured.

We wonder if these men didn't think that there was some magic formulae that would cure and change our problems in the political field. The cure would, of course, come from some ancillary area or group.

Has the work and effort of medical school been so easily forgotten? There wasn't then—and there *still* isn't—any so-called short cut to success. The uphill, rut-filled road called "hard work" is the only means.

We doubt that we can ever get the Medicare Bill withdrawn. But we can contain it, modify it, and direct its use . . . and do it for the best interest of the patient and Medicine. No one else is going to do it for us. It is our job as physicians. The formula: PLAIN, HARD WORK!

E. H. STRATEMEIER, M.D., Editor
Greater Kansas City Medical Bulletin
September 25, 1965

HE MADE SURGERY CLEAN

Ideas arise from strange situations and being a philatelist brought to my attention that modern medicine is younger than we sometimes realize.

One hundred years ago for example, surgery and infection were almost synonymous. There was a good chance that surgery would mean death from post operative infection. Then a British surgeon, Joseph Lister, doused a young boy's fractured and infected hip with carbolic acid from creosote. The patient lived. Antiseptic surgery was born.

By modern standards, it was drastic treatment. Phenol also is a caustic that burns tissues. So Lister tempered it with shellac. He also developed absorbent gauze for dressings and sterilized catgut for sutures. His inspiration came from Louis Pasteur, who had discovered a short time before that infection was caused by microbes.

Between them, Lister and Pasteur revolutionized the science of medicine.

In this country alone, there are 11 million operations a year. What is being commemorated then, is the saving of millions of lives over the last century.

Back in the Renaissance, old Ambroise Pare, reviewing his life work wrote: "God is my witness, and men are not ignorant of it, that I have labored more than 40 years to throw light on the art of surgery and to bring it to perfection and in this labor I have striven so hard to attain my end, that the ancients have naught wherein to excel us, save the discovery of first principles: and posterity will not be able to surpass us (be it said without malice or offense) save by some additions, such as are easily made to things already discovered."

A bold prophecy, but for 250 years after Pare's death his words remained substantially true. Surgery was as painful in the early 1800's as in Pare's time. The thought of an operation was torture, and patients suffered agonies beforehand; finally tied to the table and held down by force, they tore madly at their straps, shrieking in uncontrolled terror—the one saving aspect of the whole ghastly affair was that no one understood the meaning of surgical shock. The soporific draughts of Dioscorides and the sleeping sponge of the Middle Ages were forgotten or discarded as unreliable. Haste was the great thing, and he was the best surgeon who operated the fastest.

Then came the wonderful news from America: Pain had been conquered at the Massachusetts General Hospital; Robert Liston gave ether its first European trial, and on November 4, 1847, James Young Simpson of Edinburgh discovered the anesthetic properties of chloroform. The practical application of anesthesia closed forever one of the most terrible chapters in surgery, but the worst of all remained. In fact, the conquest of pain, by increasing the number and variety of operations, augmented the evil. Every hospital glorified in what was called "a good old surgical stink." Every surgeon was proud of his operating coat, which he neither washed nor changed, for the accumulating incrustations of dried blood and pus attested to his experience. Operators and their assistants—as Samuel Weis knew only too well—came from autopsies or the dissecting room and without cleaning their hands, examined patients and parturient women. Surgery was dangerous because surgery was dirty. The following suggestion in the visitors' book of Radcliff Infirmary is characteristic of hospital conditions in the first half of the 19th century: "There should be a positive order that sheets should be changed in ordinary cases at least once a month without waiting for a special request." The nursing service, until the reforms of Florence Nightingale became effective, only added to hospital horrors.

Simpson left incomplete what must nevertheless be regarded as one of his greatest achievements—his protest against Hospitalisium—in an attempt to lessen hospital mortality. Appalled at the frightful statistics he collected, he remarked that, "A man laid on the operating table in one of our surgical hospitals is exposed to more chances of death than the English soldier on the field of Waterloo."

Septic poisoning was an ever-present horror, often supervening the slightest operation; the stench of infection filled every ward, and phagedena was rarely absent. Pestilence followed in the foot steps of the most careful surgeon, and often the number of coffins carried out of a hospital corresponded to the number of patients who had entered. So Simpson tried to abolish the hospital system altogether, or that hospitals be constructed of iron, that they might be removed, rebuilt, and renovated. The suggestion was credible but it indicates how he and his generation worked in darkness.

The answer to the world's cry came from a young Quaker teaching in Scotland, and it is sad to recall that even Simpson did not perceive the light and spoke in derision of "mythical fungi." He opposed his teachings, and when Lister came down from Edinburgh to London to demonstrate the new principles, he found himself unwelcome to surgeons, students and nurses, resentful of a strange method, hating his carbolic spray, and shocked at his sacrilege of changing dressings on the Sabbath. The sisters of St. John lived up in solid opposition to this man, and it was in the midst of innumerable insults and stiff white caps held high in the air, that Joseph Lister established antiseptic surgery.

The subscribers to the *Lancet*, who turned the pages of their journal in March 1867 and skipped a difficult looking article, signed Joseph Lister, bearing the title "On a New Method of Treating Compound Fractures, Abscess, etc., With Observations of the Conditions of Suppuration"; and the members of the British Medical Association who attended the session that August in Dublin as Lister read his paper "On the Antiseptic Principle in the Practice of Surgery," little realized that the long reign of "laudable pus" was at an end and that the call for the most beneficent or surgical revolutions had been sounded. The battle extended to all countries and went on for many years, and when it was over, surgery was transformed and divided into two epochs—the pre-Listerian and the Listerian. As its originator announced, Listerism is simply applied Pasteurism. By his recognition of the role of pathogenic bacteria in wounds, and the necessity of keeping them out of wounds, Lister sterilized the practitioner, the nurse, the patient and his surroundings. Joseph Lister's manifold labors may be read in the Volumes of his "Collected Papers" (1909), but his life-work is summed up in one phrase: he made surgery clean.

C. G. STAUFFACHER, M.D.
Editor, Pettis County Medical Society Bulletin
September 1965

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READY FOR YOUR USE

When a physician sits down to write a prescription he begins a process familiar to every housewife.

He goes shopping.

In his mind he picks through the vast variety of prescription drugs available today, many of which were unknown ten years ago. He recalls what he has read about them in advertisements in professional journals, and reviews what he may have learned about the pharmacology of the drugs in medical school or in medical journals.

Just as the housewife in the supermarket wants to buy the food that will be best for her family, the physician wants to select the drug that will do most to help his patient. If the trouble is high blood pressure complicated by kidney disease, he wants to choose properly from among the many anti-hypertensives on the market, being certain to prescribe a drug that will bring down the patient's blood pressure without adding significantly to the kidney damage. Questions about the pharmacology of the drugs detain him relatively briefly; he spends much more time worrying about how a specific drug will affect a specific patient.

The specific questions he asks in regard to each drug include: What will it do for my patient? What won't it do? What are the side effects? When shouldn't it be used? What is the correct dosage? How does it rate in comparison with other, older drugs?

Perhaps, above all, he would like to have these questions answered for him by physicians who are authorities on the drugs that concern him at the moment. Since it is more than likely that the drugs he is considering were marketed within the past decade, he may feel even a greater need for expert advice. Such drugs may be so new that they were not in existence when he took his medical training. And if this is so, then his only sources of information are via drug manufacturing firms, his colleagues or special monographs on new drugs that appear in the *Journal of the American Medical Association* under sponsorship of the AMA Council on Drugs.

Now, however, a new concise source of information on the newer drugs is available to him.

"New Drugs—1965," an AMA-published book answers the specific questions a physician asks with regard to a specific drug and its uses. Furthermore, each answer represents the consensus of a battery of expert consultants plus the 13 members of the Council on Drugs.

The book may be ordered through AMA offices in Chicago at a price of five dollars, or four dollars if the buyer is a house officer or medical student.

Some facts about "New Drugs—1965":

—It has 46 chapters and 271 monographs on single-entity drugs introduced since 1955. (A single-entity drug is one used by itself, in contrast to a combination product made up of two or more individual agents.)

—Each chapter is organized on the basis of the major therapeutic use of the new drugs described in it. A brief introduction to each chapter considers older drugs that have been used for the same general purposes, and relates them to the newer agents.

—Each monograph incorporates the basic essential information a physician needs to use that particular drug with confidence to treat a patient. The information includes the generic, chemical and trade names of the drug, its actions and uses, indications and contraindications for its use, adverse reactions, dosages, preparations, and suppliers.

—Monographs are completely authoritative. Six to ten expert consultants evaluate pertinent data on each drug included in the book. Final approval is stamped on the monograph by the full Council on Drugs, each member of which is a recognized authority in his own right. Since all data gathered from pharmaceutical manufacturers and other sources is furnished to the experts for evaluation, each monograph is a distillation of practically all pertinent information in existence.

—The book will be revised every year, monographs on drugs more than 10 years old will be dropped, monographs on other new drugs will be added, and many monographs will be rewritten on the basis of new knowledge. New monographs incorporated into the book may appear first in the *Journal of the AMA*, where they will be published as they are available.

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New Members

Richard M. Childs, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Childs is a native of El Dorado, Kansas, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1956. He specializes in psychiatry.

Larry P. Courter, M.D., 6400 Prospect Ave., Kansas City, has become a member of Jackson County Medical Society. Dr. Courter is a native of Bethany, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at the University of Missouri in 1962. He specializes in radiology.

Henry N. Habib, M.D., 2300 Holmes St., Kansas City, has become a member of Jackson County Medical Society. Dr. Habib is a native of Cairo, Egypt, received his preliminary education at the University of London, England, and his M.D. degree at the University of Cairo in 1954. He specializes in urology.

David L. Hagar, M.D., 9406 E. 63rd St., Kansas City, has become a member of Jackson County Medical Society. Dr. Hagar is a native of Tulsa, Oklahoma, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1956. He specializes in pediatrics.

Carey A. Hartenbower, M.D., 4400 Nichols Parkway, Kansas City, has become a member of Jackson County Medical Society. Dr. Hartenbower is a native of Udall, Kansas, received his preliminary education at the University of Kansas and his M.D. degree at the University of Kansas in 1951. He specializes in radiology.

Cadene A. Hill, M.D., 1417 Franklin, St. Louis, has become a member of St. Louis Medical Society. Dr. Hill is a native of Yazoo City, Mississippi, received his preliminary education at the University of Nebraska and his M.D. degree at Meharry Medical College in 1937. He specializes in general practice.

Paul G. Kootz, M.D., 4320 Wornall Rd., Kansas City, has become a member of Jackson County Medical Society. Dr. Kootz is a native of Kansas City, received his preliminary education at Princeton University and his M.D. degree at the University of Pennsylvania in 1956. He specializes in general surgery.

(Continued on page 942)

Hygroton®
brand of chlorthalidone

the longest-acting diuretic

Indications: Many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Dorhout Mees,E.J.,and Geyskes, G.G.: Acta med.scandinav. 175:703,1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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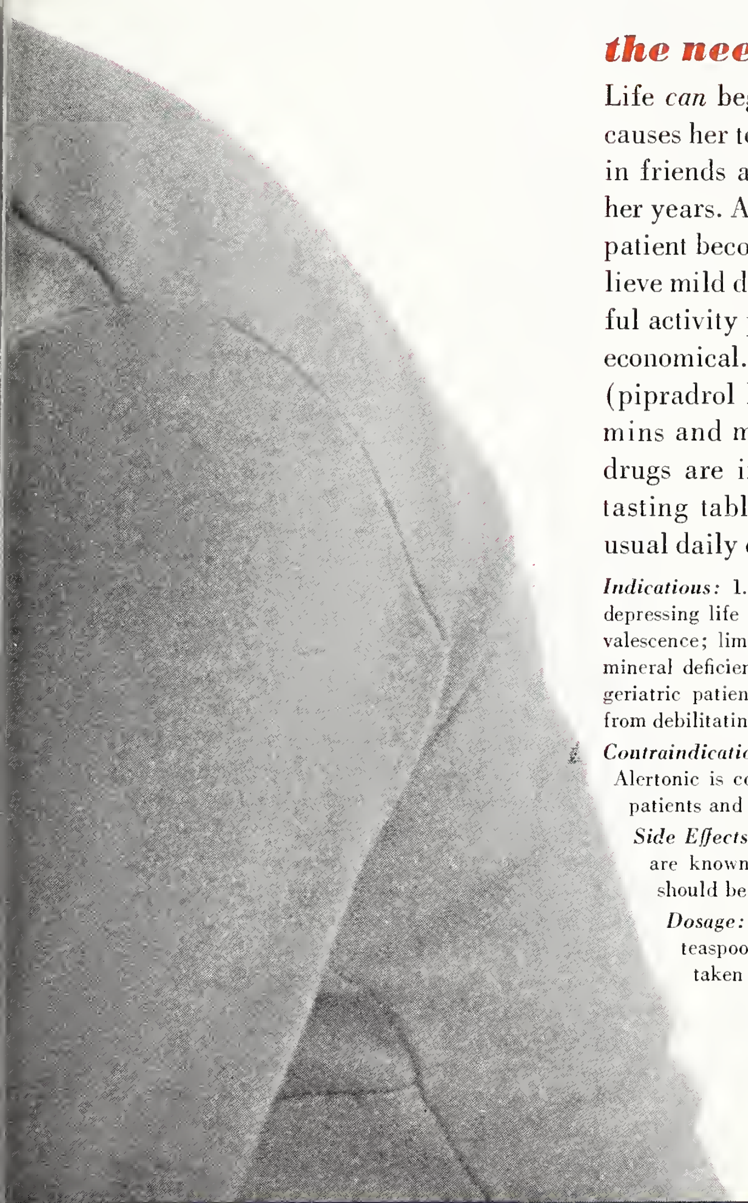

revive interest...restore activity promptly with Alertonic®

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline†, 100 mg.; inositol†, 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

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Life *can* begin at forty—except when functional fatigue causes her to feel tired all the time; to start losing interest in friends and surroundings; to look and act older than her years. Alertonic—*a prescription tonic*—can help your patient become her normal self again. Alertonic helps relieve mild depression, revive interest and restore purposeful activity promptly...with a formula that is efficient *and* economical. Alertonic contains a mild central stimulant (pipradrol hydrochloride), 15% alcohol, essential vitamins and minerals. No hormones or MAO-inhibiting drugs are included. No iron. No iodine. One pleasant-tasting tablespoonful before each meal comprises the usual daily dose.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS-stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive-compulsive states.

Side Effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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New Members (con't.)

Luis Lau, M.D., 513 Crestvale Dr., St. Louis, has become a member of St. Louis Medical Society. Dr. Lau is a native of Trujillo, Peru, received his preliminary education at Trujillo University and his M.D. degree at the University of Mayor De San Marcos in 1955. He specializes in psychiatry.

James K. Loutzenhiser, M.D., 4643 Wyandotte St., Kansas City, has become a member of Jackson County Medical Society. Dr. Loutzenhiser is a native of Butler, Pennsylvania, received his preliminary education at the University of Pittsburg and his M.D. degree at the University of Pittsburg in 1956. He specializes in psychiatry.

Don S. Pruett, M.D., #35 N. Central, St. Louis, has become a member of St. Louis Medical Society. Dr. Pruett is a native of St. Louis, received his preliminary education at Yale University and his M.D. degree at the University of Missouri in 1960. He specializes in surgery.

Donald C. Sauer, M.D., #18 S. Kingshighway Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Sauer is a native of St. Louis, received his preliminary education at Washington University and his M.D. degree at Washington University in 1960. He specializes in surgery.

Juan M. Taveras, M.D., Barnes Hospital Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Taveras is a native of Dominican Republic, received his preliminary education at Normal School Santiago and his M.D. degree at the University of Pennsylvania. He specializes in radiology.

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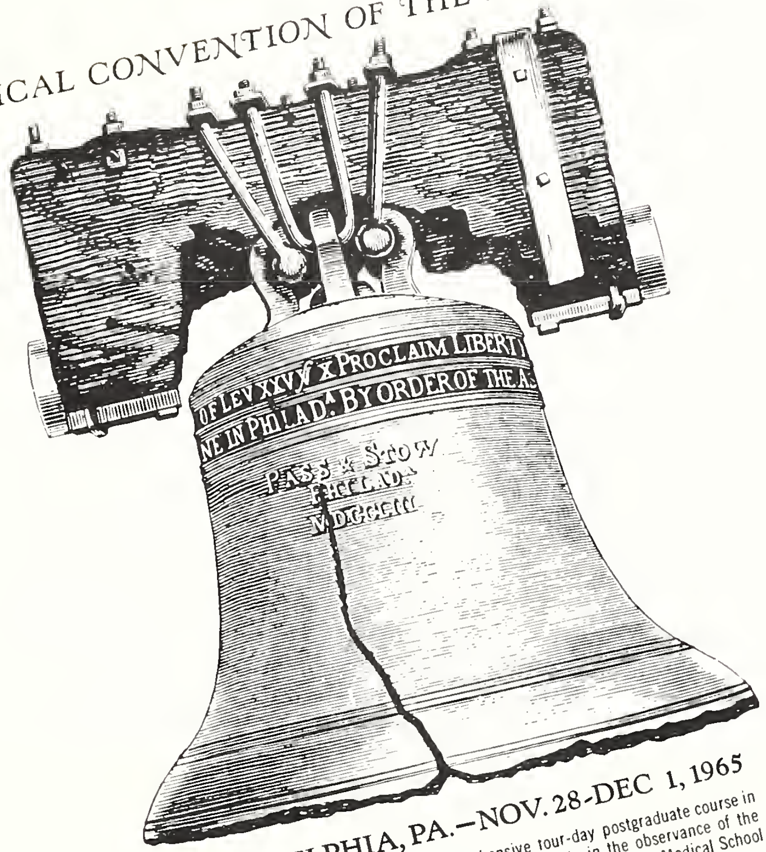
19th CLINICAL CONVENTION OF THE AMA



PHILADELPHIA, PA.—NOV. 28-DEC 1, 1965

Plan to attend the world's most comprehensive four-day postgraduate course in recent developments in medical science, and participate in the observance of the founding of the first medical college established in this country—the Medical School of the University of Pennsylvania.

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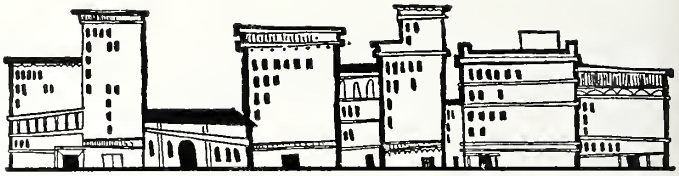
The complete scientific program, plus forms for advance registration and hotel accommodations, will be featured in JAMA October 25

From the Medical Schools



WASHINGTON UNIVERSITY

Dr. William H. Danforth has been elected President of the Washington University Medical School and Affiliated Hospitals board for a term of three years. He succeeds Dr. Carl V. Moore, who served as the first President of the board. Dr. Moore asked to be relieved of his administrative office to devote full time to his position as Professor and Head of the Department of Medicine. Dr. Danforth was recently appointed Washington University's Vice Chancellor for medical affairs.

Eighteen new faculty members have been named to the School of Medicine. New assistant professors are Dr. David Apirion, microbiology; Dr. Charles M. Baugh, internal medicine; Dr. Stephen S. Chapman, preventive medicine; Dr. David N. Dietzler, pediatrics; Dr. William L. Green, internal medicine.

Dr. William B. Hardin, Jr., neurology; Dr. Duane C. Hellam, internal medicine; Dr. John O. Holloszy, preventive medicine and internal medicine and Dr. Jean G. Swartz, otolaryngology.

New instructors are Dr. Dale Bennett, pathology; Dr. James P. Hayes, anesthesiology; Dr. Joel B. Kirkpatrick, pathology; Dr. Rosalind H. Kornfeld, internal medicine; Dr. Charles Kuhn, pathology; Dr. Robert C. McKnight, pharmacology; Dr. Michael W. Mosseson, internal medicine; Dr. William Snodgrass, urology, and Dr. Barbara Gibgot Weiss, radiology.

ST. LOUIS UNIVERSITY

Establishment of a Section of Allergy in the Department of Internal Medicine at the St. Louis University School of Medicine has been announced. Dr. Raymond G. Slavin, formerly an associate in medicine at Northwestern University School of Medicine, was named assistant professor of medicine and director of the new section. The section is within the department of internal medicine which is under the direction of Dr. Thomas F. Frawley, chairman.

Dr. Slavin graduated from the St. Louis University School of Medicine and had house-officer training at the University of Michigan. He was a fellow in allergy and immunology at Northwestern University and received the master of science degree there in 1963.

A gift of $150,000 from the Wohl Foundation has been received by the School of Medicine for the establishment of a Section of Child Psychiatry in the Department of Neurology and Psychiatry at the David P. Wohl Memorial Mental Health Institute. Dr. Edward T. Auer, professor and chairman of the Department of Neurology and Psychiatry, and director of the David P. Wohl Memorial Mental Health Institute, will head the new program. In commenting on the gift, Dr. Auer said, "The new section will become the nidus for the development of a program in child psychiatry at the Institute for which other funds will be sought. The gift will aid in the initial recruitment of the staff for a development sorely needed in the St. Louis area."

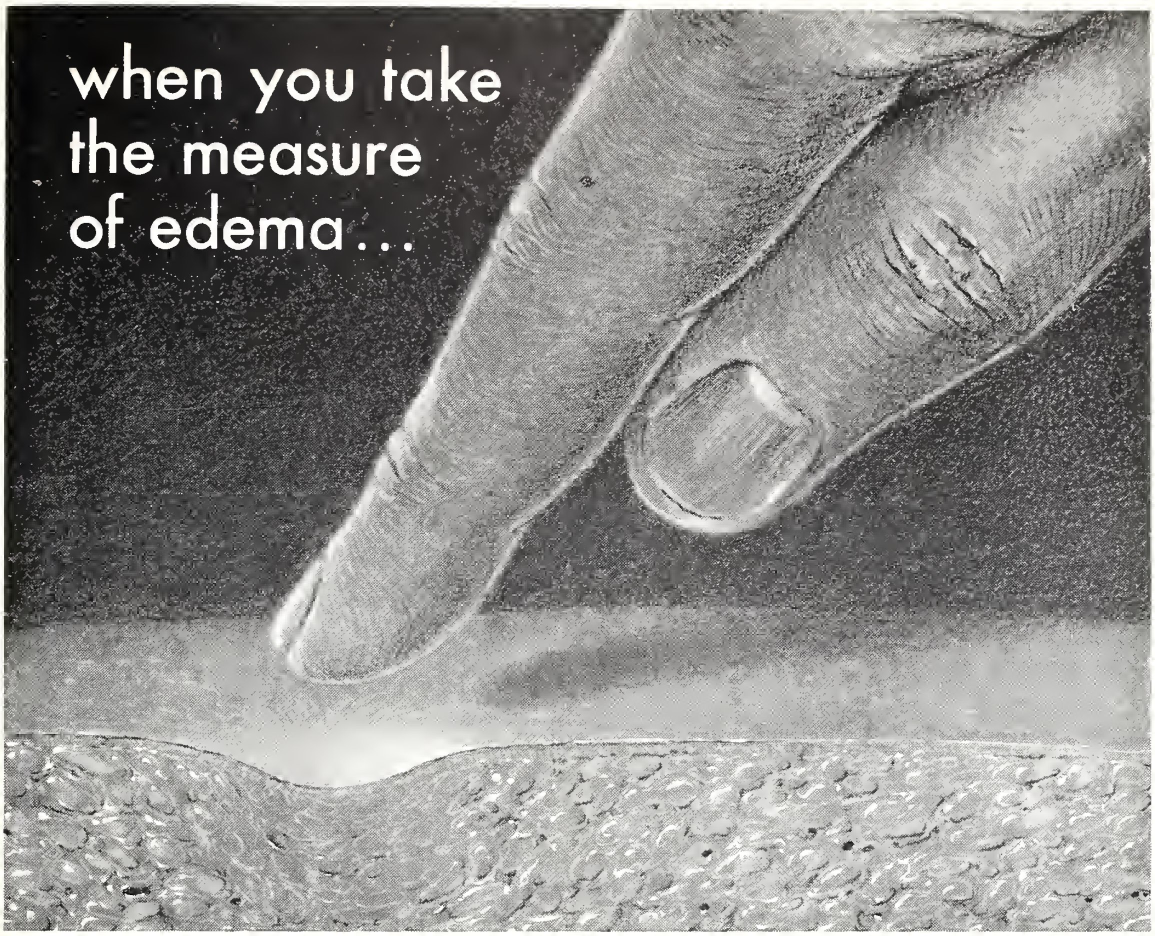
In Memoriam

Williams, Luke E., M.D., Kansas City, a graduate of Howard University, 1922; member of Jackson County Medical Society; aged 74; died August 29, 1965.

Caravelli, Anthony F., M.D., Downey, Illinois, a graduate of St. Louis University, 1942; member of St. Louis Medical Society; aged 49; died September 12, 1965.

Rice, Grover C., M.D., Brunswick, a graduate of Ensworth College, 1910; member of Chariton-Macon-Monroe-Randolph County Medical Society; aged 77; died September 13, 1965.

Canella, John M., M.D., Hannibal, a graduate of St. Louis University, 1945; member of Marion-Ralls-Shelby County Medical Society; aged 44; died September 16, 1965.



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DIURETIC ACTION: Clinically, the oral administration of AQUATAG (benzthiazide) results in diuretic activity within two hours with maximal natriuretic, chloruretic, and diuretic effects occurring during the fourth, fifth and sixth hours. Maintenance of response continues for approximately 12 to 18 hours. Acidosis is an unlikely complication since therapeutic doses of AQUATAG (benzthiazide) do not appreciably increase bicarbonate excretion. Edematous patients receiving 50 mg. of AQUATAG (benzthiazide) daily for five days developed a maximal increase in the rate of sodium excretion on the first day, and maintained this high rate until depletion of excessive body stores of sodium.

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DOSAGE: Diuresis, initially 50 to 200 mg.; maintenance 25 to 150 mg., daily. Hypertension 50 to 100 mg. initially, adjusted to 50 mg. t.i.d. or downward to minimal effective dosage level.

PRECAUTIONS AND SIDE EFFECTS: Electrolyte imbalance with hypokalemia, hypochloremic alkalosis and hyponatremia may occur. Other reactions may include blood dyscrasias, hyperuricemia and gout, nausea, jaundice, anorexia, vomiting, diarrhea, dizziness, paresthesia, photosensitivity and headache. Insulin requirements may be altered in diabetes.

WARNINGS: Dosage of coadministered antihypertensive agents should be reduced by at least 50%. Use with caution in edema due to renal disease; advanced hepatic disease or suspected presence of electrolyte imbalance. Stenosis or ulcer of small intestine have been reported with coated potassium formulas and should be administered only when indicated. Until further clinical experience is obtained, the use of the drug in pregnant patients should be carefully weighed against possible hazards to the fetus.

CONTRAINDICATIONS: AQUATAG (benzthiazide) is contraindicated in progressive renal disease or disfunction including increasing oliguria and azotemia. Continued administration of this drug is contraindicated in patients who show no response to its diuretic or antihypertensive properties.

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JOHN CROWE, M.D., ***Secretary***

Missouri Academy of General Practice

The 1965 State Officer's Conference of the AAGP was held at the Muehlebach Hotel on Saturday and Sunday, September 25-26. More than 200 state chapter representatives were in attendance. Some of the specific subjects presented on Saturday were: "General Practice and the Joint Commission on Accreditation of Hospitals," "Student View of Medical Education," "Training for General Practice—in 1975," "The Association of American Medical Colleges View of Current Medical Education," "Internal Revenue Service Regulations."

In addition to these formal presentations group meetings were held by the Chairmen of the various AAGP Commissions to discuss problems which normally are studied and considered by these commissions. These discussions included the Commission on Education, Commission on Environmental Medicine, Commission on Hospitals, Commission on Legislation and Public Policy, and the Commission on Membership and Credentials.

Physician-Congressman Durward G. Hall, M.D., reviewed developments on various pieces of medical and health legislation including the political maneuvering which finally led to enactment of "medicare."

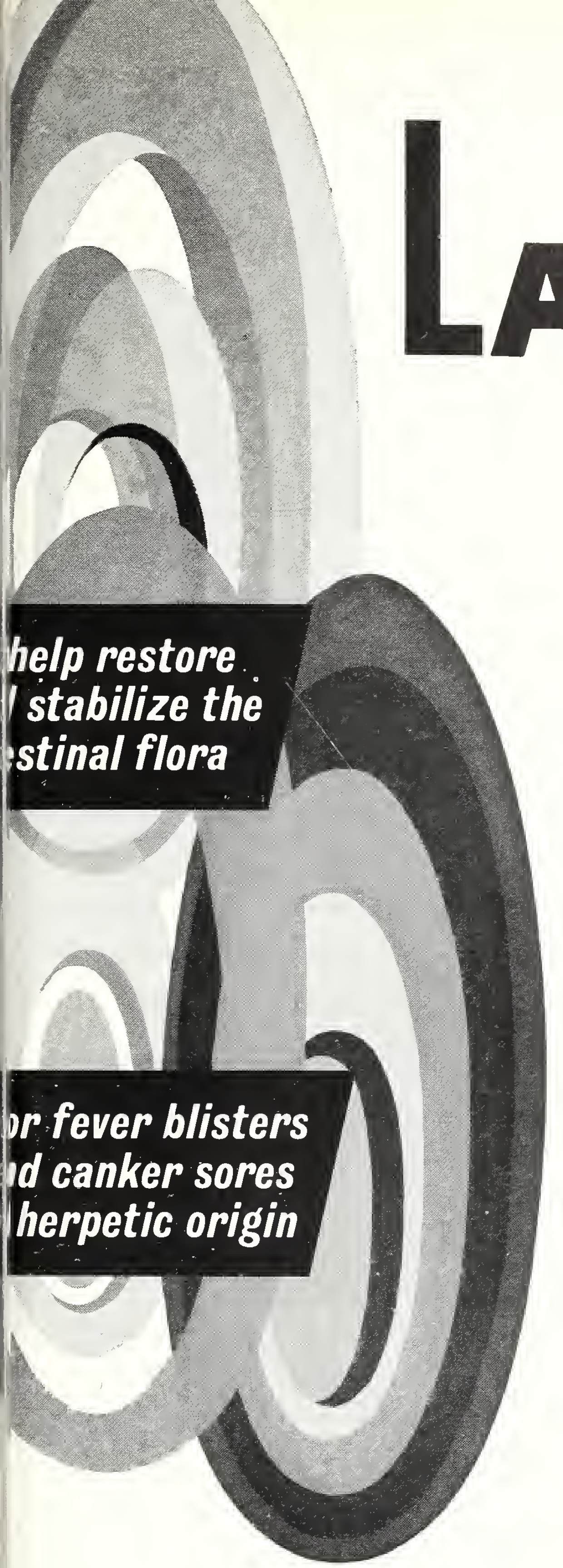
The Missouri Academy and St. Louis and Kansas City chapters were well represented at the national conference which attracted more than 200 general practitioners. MAGP President Doyle McGraw, M.D., and fellow officers pose for picture.

From 6:00 p.m. to 7:00 p.m. on Saturday evening "a real get together party" was promoted through the courtesy of A. W. Breckenkamp, Administrator, AAGP Group Disability Plans. Following this came dinner and a fine program of light entertainment.

On Sunday morning, "A Report From the AMA" was presented by James Z. Appel, M.D., President of the AMA. Following this, Congressman Durward G. Hall, M.D., of Springfield, gave a most interesting presentation on "Current Medical Legislation." The formal program concluded at Noon with the general consensus of those attending that here was another well planned, informative, helpful, program for Academy officers and members.

The Missouri Academy and the Greater Kansas City Chapter were well represented during the entire conference.

Speech makers for Smith Kline & French Laboratories passed a significant milestone recently with delivery of the 10,000th talk in the company's campaign to tell the story of the pharmaceutical industry to the American people. In Missouri, SK & F speakers have given 140 talks before audiences totaling more than 5,200 persons. About half of these speeches were arranged through pharmacists and physicians. Logging more than 4,000 hours on platforms in 48 states and the District of Columbia during the past six years, the company's trained speakers have addressed more than 400,000 persons face-to-face and reached several million others through radio and television.



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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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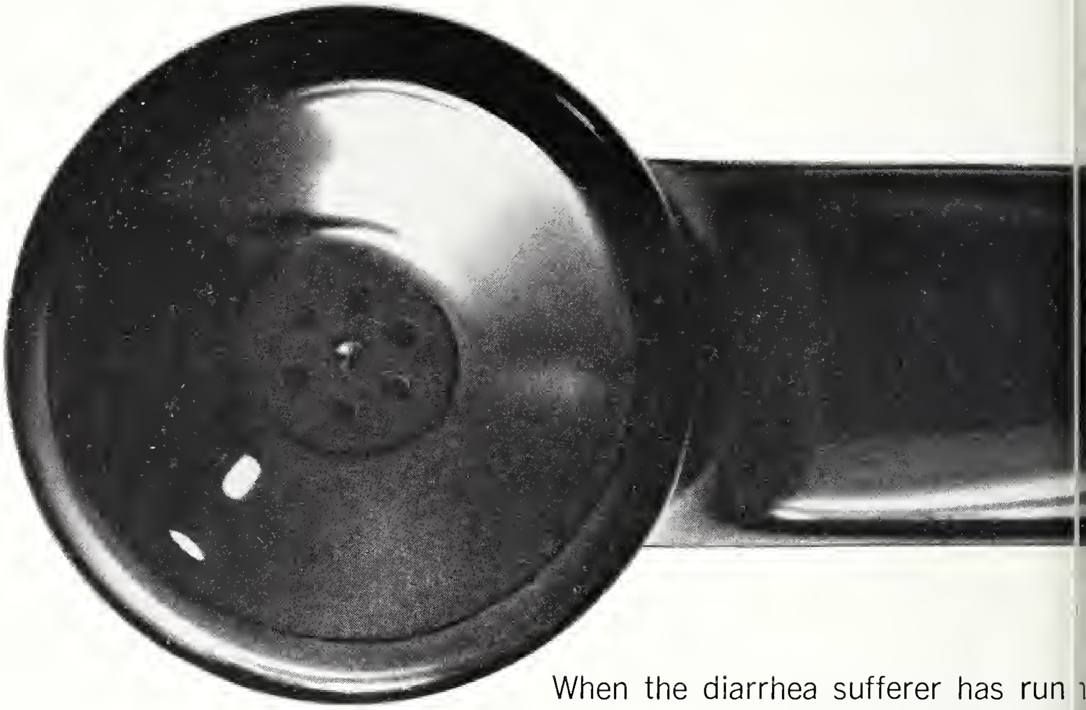
When uncontrolled diarrhea brings a call for help



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Council Maps Liaison Improvement Program

Plans to improve relations and communications with other professional organizations were approved by the Missouri State Medical Association's Council at its meeting in Boonville, October 2 and 3, 1965. MSMA Secretary John I. Matthews, M.D., proposed that the Association form a special committee charged with establishing liaison with the Missouri Bar Association. Representatives of the medical and legal professions could then meet at regular intervals to discuss matters of mutual interest. The Council voted to submit the proposal to the House of Delegates for approval.

The Council also discussed the idea of forming a state association or council of allied professions, a program which has been implemented successfully in a number of other states. The Public Service Committee was asked to investigate this proposal and to report back to the Council with a suggestion or recommendation.

Doctor Matthews reported that the Medical Association and the Missouri Association of Osteopathic Physicians and Surgeons had worked together closely during the recent session of the General Assembly to the benefit of both groups. He proposed that the MSMA Legislative Committee be asked to meet with its Osteopathic counterpart to discuss problems and to make plans for the next legislative session. The Council gave unanimous approval.

Philip V. Maher, the Governor's Administrative Assistant for Urban Affairs and Director of the Missouri Office of Economic Opportunity, appeared as a special guest of the Council to report on the medical aspects of the government's new welfare programs. He explained that some of the problems and criticism which arose from initiation of the Neighborhood Youth Corps program earlier this year resulted from a lack of time and a misunderstanding as to the roles of the Division of Health and the Medical Association. Maher assured the Council that the Association will be consulted as future programs are put into operation. Council Chairman Hector W. Benoit, Jr., M.D., assured Maher that the Association and individual physician-members will be most willing to assist him in future planning.

Tom O'Brien of the Executive Staff reported that the two Blue Shield plans in Missouri might be willing to serve as administrative or fiscal agents under the new "medicare" law (PL 89-97). Individual Councilors were asked to determine whether this would be acceptable to physicians in their districts. If the medical profession gives its support and if the Blue Shield plans indicate that they would be willing to assume the responsibility, the Association will recommend to the Department of Health, Education and Welfare that Blue Shield be selected to service "medicare" in Missouri.

The Council also voted to send letters to all medical specialty groups in Missouri advising them of the potential hazards of individual negotiations with government "medicare" agencies and recommending united action through MSMA and AMA.

Doctor Matthews reported that the program for the 1966 Annual Session has been planned and many of the guest speakers already have accepted invitations to appear. He also noted that for the first time in Association activity a program of scientific films will be run concurrently with the "live" scientific programs. This will give physicians a greater selection in planning their time at the meeting.

Council members attending the meeting were:

Hector W. Benoit, Jr., M.D., Chairman, 7th District
David N. Kerr, M.D., Vice Chairman, 3rd District
Joseph L. Fisher, M.D., 1st District
Lysle M. Bach, M.D., 2nd District
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John I. Matthews, M.D., MSMA Secretary
Walter T. Gunn, M.D., MSMA Treasurer

The next Council meeting will be held in St. Louis on December 11 and 12.

This Council report covers only the highlights of the October meeting. The complete official report of Council proceedings is on file in the Executive Office of MSMA and copies have been sent to all members of the Council and to component medical societies.

Curtis Predicts 'Medicare' Review

The new Social Security "medicare" law probably will be reconsidered by Congress in about five years, according to Rep. Thomas B. Curtis (R-Mo.). The congressman made the predication while addressing the annual meeting of the Jackson County Medical Society in Kansas City. About 200 physician-members attended the meeting.

Mr. Curtis said that it will take five years for Congress and the American people to realize that there are two important aspects of the "medicare" law which did not receive enough attention before the measure was rushed through Congress this year. One aspect which demands further examination is the change which converts the Social Security program from one of cash benefits to one of service benefits. The other questionable innovation involves the launching of a welfare program without some sort of a means test.

"This," said the congressman, "is the essence of socialism."

Harry Statland, M.D., President of JCMS, presided over the brief business meeting in which Society members approved a continuation of their present dues schedule.

Cherchez la French Dictionary!

Messieurs,

Nous recevons depuis de nombreuses années la revue "Missouri Medicine" que vous publiez. Nous constatons malheureusement que les numéros 3 et 8, volume 62, 1965 ne nous sont pas parvenus en leur temps. Vous serait-il possible de faire rechercher à notre intention un exemplaire de chacun d'eux afin que notre collection soit complète?

Je vous en serais très obligé et je vous prie d'agréer, avec mes remerciements anticipés, l'expression de mes sentiments distingués.

Le Conservateur en Chef,
(signed)

The above communication was received in the Publication Office from the National Library in Paris.

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Indications: 'Deprol' is useful in the management of depression, both acute (reactive) and chronic. It is particularly useful in the less severe depressions and where the depression is accompanied by anxiety, insomnia, agitation, or rumination. It is also useful for management of depression and associated anxiety accompanying or related to organic illnesses.

Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of preexisting symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

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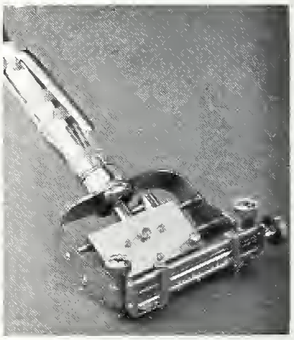
Notes of interest from Here . . . . and There

Dr. **Robert W. Kelley** of St. Louis has been named President-Elect of the Constantinian Society during the organization's 20th Anniversary meeting in Washington, D. C. The Constantinian Society is a national organization of physicians who served in the Mediterranean area during World War II. . . . Dr. **C. Gordon Stauffacher** was recently presented a Silver Lily pin of the Missouri Society for Crippled Children and Adults. He was honored for his 25 years of service in the Society's programs. . . . Dr. **Charles H. Beasley** has retired as director of the Jefferson Barracks Veterans Administration Hospital. Doctor Beasley, who is 70 years old, began his government career in 1925 in the Army Medical Corps.

Eli Lilly and Company has introduced two half-strength preparations of its topical steroid Cordran® (flurandrenolone, Lilly). Maintenance therapy can be provided by these products with substantial savings to the patient. The new products are Cream Cordran, Half Strength, 0.25%, and Ointment Cordran, Half Strength, 0.025%. The company claims that the new products have been found to be particularly useful after initial control with Cordran, 0.05%, when prolonged therapy is required, as initial therapy in mild dermatoses, for the treatment of widespread lesions, when economics might otherwise deter the use of topical steroids and in conjunction with occlusive dressings.

Exna®-R, combining a thiazide diuretic and reserpine in a single tablet for more effective management of hypertension, has been introduced by A. H. Robins. The white, compressed, scored tablets, monogrammed AHR, are packaged in bottles of 100 and 500. Each tablet contains 50 mg. of Exna (benzthiazide) and 0.125 mg. of reserpine. Thiazide diuretics and the Rauwolfia alkaloids (reserpine) are recognized agents for the management of hypertension. The simultaneous administration of a thiazide diuretic and a Rauwolfia derivative produces an antihypertensive effect which exceeds that obtained with either agent alone.

A lightweight, air-powered handle to operate the existing Brown Dermatome, used for skin-grafting procedures, has been introduced by Dr. Robert M. Hall, Pittsburgh oral surgeon. It is the fourth instrument developed by him for his "air surgery" concept. The new device is four inches long and contains a miniature air motor run by compressed air or nitrogen. Throttle and brake controls are on the handle for fingertip operation. According to Doctor Hall the new Air Handle is vibration-free permitting smooth skin removal at an even thickness. The instrument reportedly is non-sparking, self-cooling, and eliminates the flexible cable, foot pedal, and electric motor used with the Brown Dermatome.



ROBERT L. GLASS, M.D., *Sedalia**

Walter Dandy, Sedalia's Number One Paperboy

All neurosurgeons and many other physicians are familiar with the name of Dr. Walter E. Dandy and his monumental contributions to neurosurgery. Walter Dandy's early life in Sedalia is less well known, but it clearly showed his superiority and forecast his future greatness.

Walter's parents, John and Rachael Dandy moved to Sedalia from Barrow-In-Furness, England, shortly after their marriage in 1883. John Dandy was a railroad man and moved from an economically depressed England to what was then a booming railroad town to work for the Missouri-Kansas-Texas railroad, ultimately becoming an engineer of the crack passenger train, "The Katy Flyer."

On April 6, 1886 the Dandys' only child, Walter Edmund, was born in a small bungalow in Sedalia's east side. Walter's mother is remembered as the neighborhood's most meticulous housekeeper and best cook, and it is probably from his mother that Walter acquired his respect for excellence and superior standards.

A contemporary and neighbor, Dr. R. S. Battersby (later of the Department of Pediatrics, Missouri University Medical School), clearly remembers a small wooden bench Walter made as a boy, a bench so precisely mortised and flawlessly finished that it could have passed for the work of a journeyman cabinet maker. Playing marbles was a favorite pastime of the boys of the era. Young Dandy combined above average skill with discretion in choice of opponents, and he usually had accumulated a quart jar of agates (worth ten cents each!) by the end of a summer. Doctor Battersby recalled, "Walter always played for keeps."

Dandy's academic ability was apparent in grade school where he was allowed to skip a grade. During his high school years he delivered newspapers as an after-school job, and he consistently won the "Newsboy of the Month" award, an incentive recognition for quality of service. He invested his savings in a bicycle to use on his paper route. Bicycling was an innovation among contemporary paperboys and permitted him to service a much longer route, while maintaining award winning quality service. He played ball, ice skated and swam in the local swimming hole with as much enthusiasm as any boy but always put work first.

Walter Edmund Dandy, M.D., of Johns Hopkins at the height of his medical career.

On May 28, 1903 Walter Dandy graduated first in his class from Sedalia High School and delivered the valedictory address entitled "Education." Some of the other student orations were: "Official Corruption," "Does Poverty Aid Character," "The Philosophy of Peace" and "Patriotism, A Virtue." These titles sound like topics of debate during the recent presidential campaign and suggest that basic political problems may be little different today from what they were 60 years ago.

Dandy enrolled at Missouri University after

---

[*] Doctor Glass is in the private practice of surgery in Sedalia, an Attending Surgeon at Ellis Fischel State Cancer Hospital and Instructor in Surgery at the University of Missouri School of Medicine.

graduation from high school. He roomed with his Sedalia neighbor, Doctor Battersby, who vividly recalls some of Dandy's outstanding personal traits, his ability to organize his time, his intense concentration and his aggressiveness. After dinner on a typical day he would play cards until 7:30 in the evening, study intently until 10:00, then retire and immediately go to sleep—often accomplishing the later two in the presence of noisy social activity in his room. He allotted time for recreation just as faithfully as he did for work, a practice he continued through his entire life.

He regularly played tennis and, in spite of rather unorthodox form, seldom lost because he just couldn't let himself lose. During his summer vacations from college Dandy held jobs as a street car conductor and barn painter in Sedalia, and older residents still remember him as the best conductor in town and the best painter of the biggest barns on nearby farms. These characteristics of superiority were ingrained long before he picked up "Gray's Anatomy" the first time. During his senior year in college he was elected to Phi Beta Kappa and QEBH, a senior honor society limited to ten men chosen for leadership and academic excellence. He was also elected president of the Pettis County Club, a further indication of his general popularity and ability in fields other than purely academic.

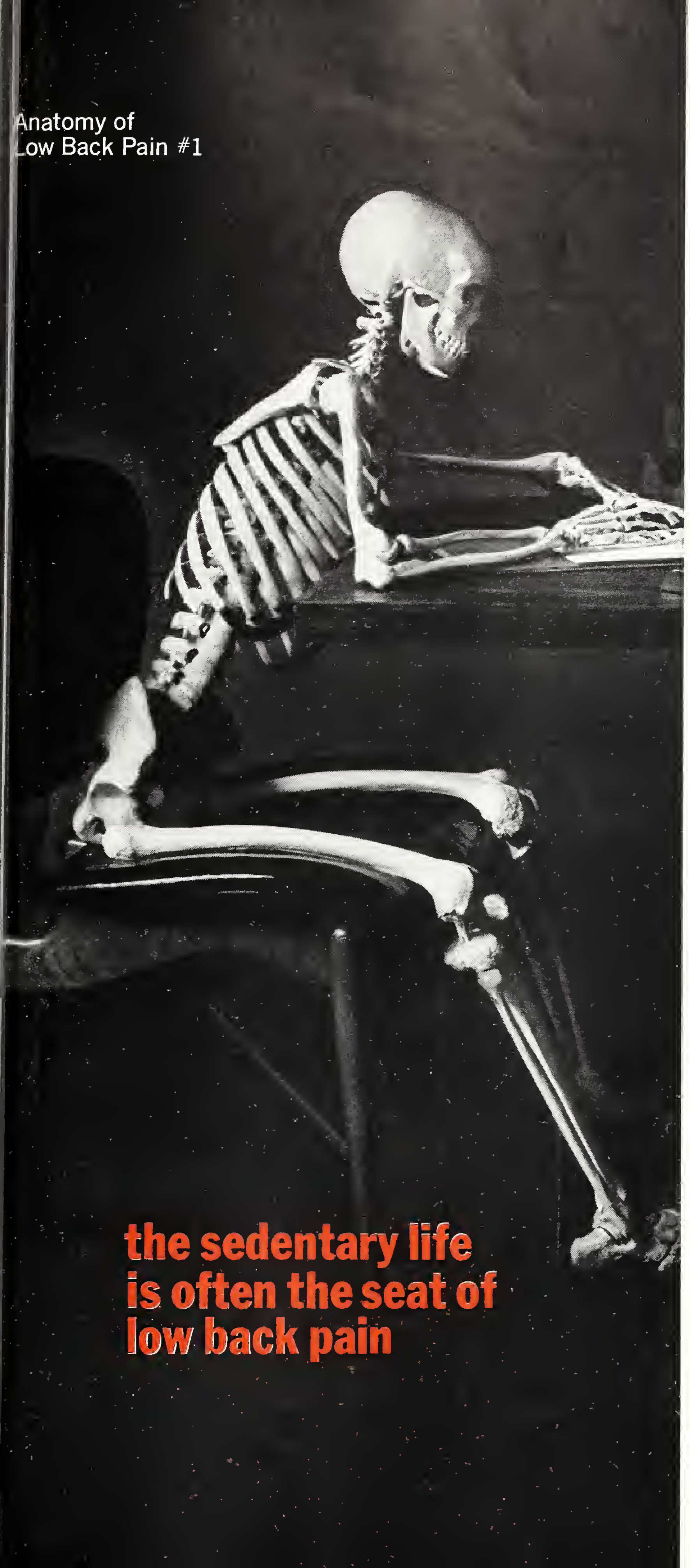
An early family portrait of John and Rachael Dandy and their son, Walter Edmund.

The house at 1323 E. Fifth Street in Sedalia where Walter Dandy was born, as it appears today.

After graduation from college Dandy declined a Rhodes scholarship and with the help of the Professor of Zoology, W. C. Curtis, was enrolled in the second year class at the Johns Hopkins School of Medicine. At Hopkins, Dandy's talents were recognized early by Professor of Anatomy, Franklin P. Mall, who entrusted the dissection and description of the youngest human embryo in his collection to the new student. The published result of this work was Dandy's first scientific paper and is still considered a classic in embryologic literature, being referred to as "The Dandy Embryo." He graduated from medical school in 1910, seventeenth in a class of 85. In addition to the M.D. degree, he received an M.A. on the basis of the "Dandy Embryo" research.

Doctor Dandy continued his career as a house officer on the surgical service of Dr. William S. Halstead. During the busy years of his residency, Dandy did the fundamental studies on the mechanics of hydrocephalus which he published in 1913. Doctor Halstead realized the monumental nature of this research and wrote to Dr. E. A. Parks, "Dandy will never do anything to equal this . . . ," a prediction which Halstead may have wished to forget in later years.

By 1918, the year he was chief surgical resident, Doctor Dandy had developed and pub-



The human spine is not engineered for prolonged sitting at desks, pianos, typewriters and drafting boards. The stresses set up by the heavy, forward-tilted head and trunk, balanced precariously on an insufficient base, result in strain of the dorsal musculature, particularly at the low lumbar level.

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Precautions: 'Soma', like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g., meprobamate.

Side Effects: The only side effect reported with any frequency is sleepiness, usually on higher than recommended doses. An occasional patient may not tolerate carisoprodol because of an individual reaction, such as a sensation of weakness. Other rarely observed reactions have included dizziness, ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, and gastrointestinal symptoms.

One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodol and subsequent cross reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. In cases of allergic or hypersensitivity reactions carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respiratory depression.

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lished the technique of ventriculography, probably the most important contribution ever made to clinical neurosurgery. He is said to have gotten the inspiration for these studies while Doctor Halstead was demonstrating the bowel gas pattern on an abdominal X-ray film. Halstead, whose list of residents reads like a "Who's Who of American Surgery," called Walter Dandy his most brilliant pupil, this, barely more than a decade after young Walter was Sedalia's best paperboy!

Walter Dandy's graduation portrait, taken at the time he was named valedictorian of the Class of 1903 at Sedalia High School.

Among Doctor Dandy's more important contributions after his residency were the development of the first safe and effective operation for Meniere's Disease and important technical improvements in the treatment of acoustic neuromas and pituitary lesions. He pioneered the operative closure of cerebral-spinal fluid fistulas, and in 1934 he was the first to treat a carotid cavernous fistula by isolation. He performed another important first in 1937 when he clipped the neck of a berry aneurysm.

During Doctor Dandy's entire life, active as it was, his greatest source of pleasure was a close and happy family. When he became well established in practice, he encouraged his father's early retirement from railroading and helped his parents move to Baltimore. When he established his own family, Dandy seldom spent an evening away from his wife and four children. (His son later became an anesthesiologist at the Johns Hopkins Hospital.) Just as during his college years, Dandy always delegated a certain time for recreation. He actively enjoyed tennis, golf and bridge during his entire life. He maintained an active friendship with his old Sedalia friends, Mr. and Mrs. Foraker (Polly Battersby) and Doctor Battersby, making frequent visits to his home town.

Apparently Doctor Dandy maintained a somewhat cold exterior professionally, probably a necessity during the early discouraging years of neurosurgery. Dr. Alfred Blalock suggests that this characteristic was very superficial, and in support of his contention he recalls Dandy paying tuition for needy students, sending sick house officers and nurses on vacations and providing a

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home for an orderly. Only the recipients knew the benefactor.

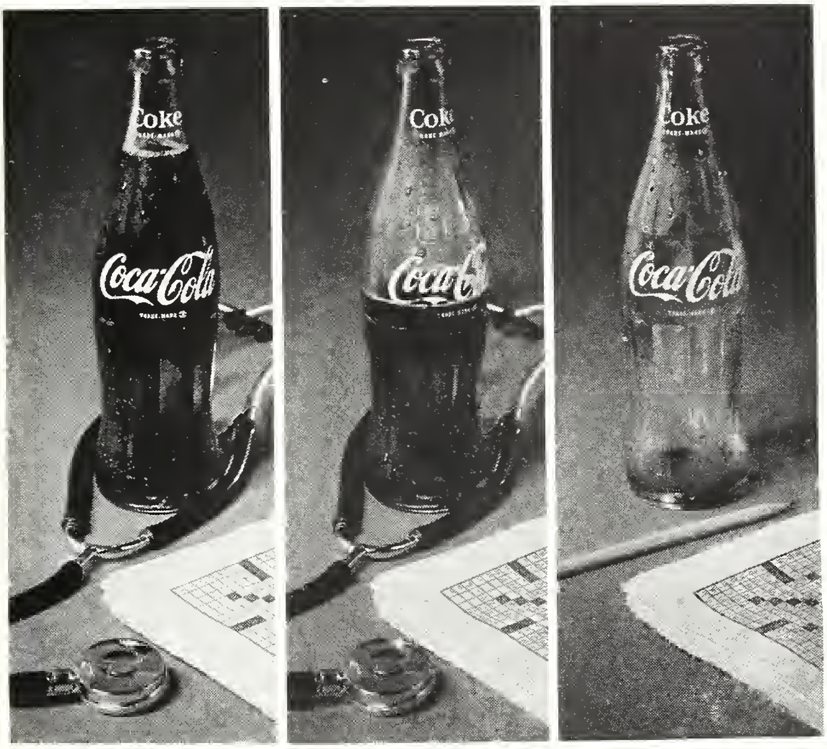
Like many prominent surgeons of his day, Doctor Dandy often traveled great distances to see prominent patients in consultation. He was called to Mexico in 1940 to see Leon Trotsky, who died before Dandy's arrival. During the depression, a prominent Sedalia banker shot himself, and Doctor Dandy interrupted a trip to return home to operate at the Bothwell Hospital. (The banker also died.)

Probably the only thing in which Dandy did not excel was composition, at least by Doctor Halstead's criteria. In a letter to E. A. Parks, Halstead refers to Dandy's work: "I attempted to correct his papers and rewrite parts of them. The result seemed to be that he composed even more carelessly—I have supplied him with books like Alburt's *Notes on Composition*. His recent articles have been so hopeless that after struggling through a page or two I have advised the employment of a teacher of English."

However, in another letter to Doctor Parks, Halstead noted, "I know of no contribution to surgery since the opening of the Johns Hopkins Hospital which might rank with Dandy's."

Walter Dandy's other important contributions to medicine are too numerous to discuss in this brief article. Shortly after his untimely death at age 61, on Good Friday, April 19, 1946 the *Baltimore Evening Sun* published a most appropriate obituary.

> *"He had imaginative genius to conceive new and startling operative techniques, courage to try them and skill, superb skill, to make them successful. It can be said without fear of contradiction that medicine has lost one of its greatest men."*



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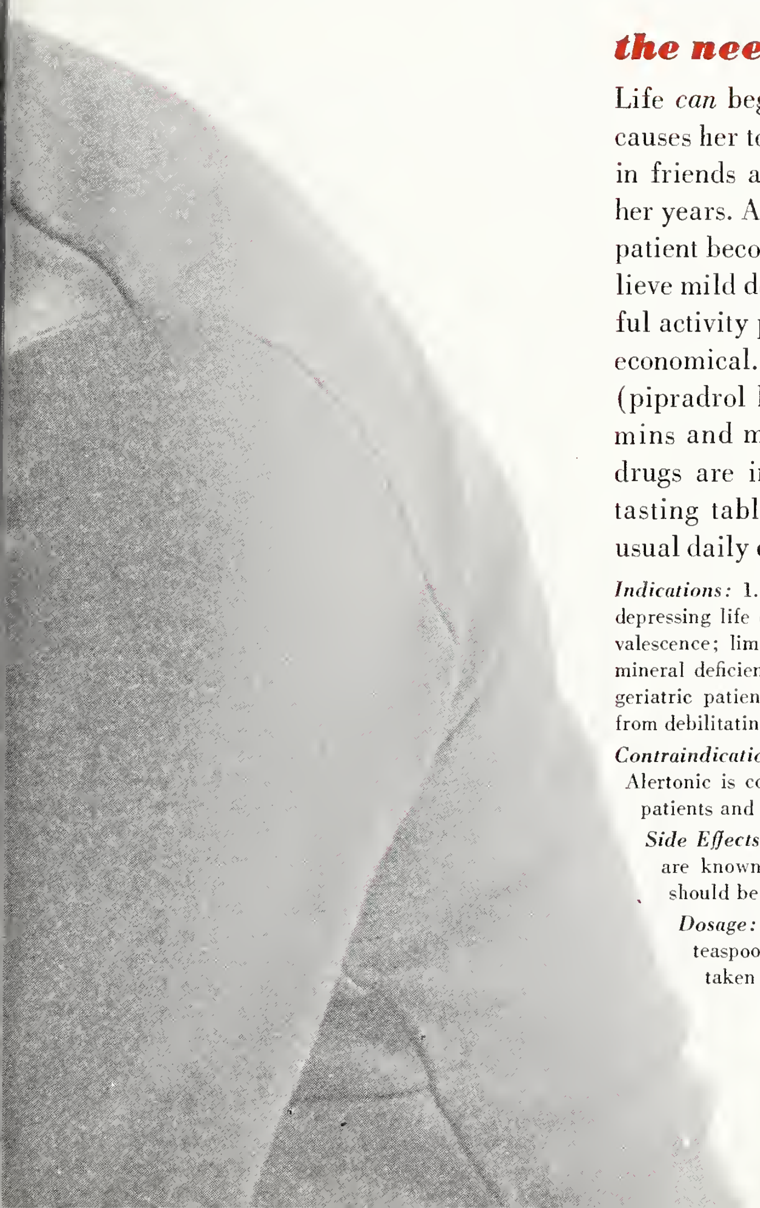

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Side Effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

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JOHN S. SPRATT, JR., M.D. *and*
MILFORD T. KUBIN, M.D., ***Columbia***

1964-1965 Annual Report:

Ellis Fischel State Cancer Hospital and Cancer Research Center

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The Editors are grateful to the authors for preparing this special report for the readers of Missouri Medicine. *It is hoped that the article will provide individual practicing physicians with current information and insight on the programs and policies of Ellis Fischel State Cancer Hospital and the Cancer Research Center. Doctor Spratt is Chief of Staff, EFSCH and Director, CRC; Doctor Kubin is Medical Superintendent, EFSCH.*

The purpose of the Ellis Fischel State Cancer Hospital is to render the best possible care to the indigent cancer patient with contemporary methodology and facilities. The purpose of the Cancer Research Center is to provide the flexibility and financial support required for clinical research. Clinical research insures a continued improvement in the applied clinical sciences. Its goals are to assess internal efficiency and effectiveness of care and treatment and to set standards for measuring improvement. It seeks insight into the natural history of cancer and helps develop the methodology requisite to insure improved prevention, care and treatment. In keeping with the charge contained in the original enabling legislation of 1937, the Hospital and Center staffs will conduct only such scientific research as will promote the welfare of indigent patients committed to its care.

The Ellis Fischel State Cancer Hospital celebrated its 25th year of consecutive operation in April 1965. During this period the Hospital attended more than 34,000 cancer patients, approximately 10% of the expected incidence in Missouri during this quarter century. The Hospital is an administrative unit of the Division of Health of the State of Missouri. Professional staff is selected and professional policies established according to the advice of the Missouri Cancer Commission, a gubernatorially appointed body of four electors. The personnel policies of the Hospital are those of the Missouri State Merit System. The Hospital is supported entirely by legislative appropriations.

Fig. 1 demonstrates the levels of research and professional activities of the Hospital during the past 25 years. As can be seen from the number of annual publications, the research activity has been of intermittent intensity. With no extramural support for research and development the growth of research has not been continuous. The active renewal of supported clinical research, intended to produce a sustained improvement in the quality of patient care, has been associated with a progressive increase in the number of patient referrals to EFSCH. During 1964-1965, the number of new patient applications increased by 12.09%.

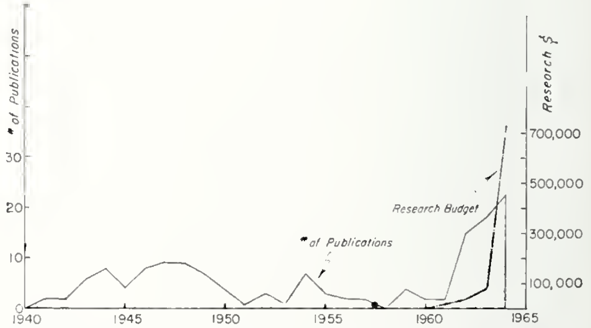

Fig. 1 Graphs showing variations in scientific research and publication activity during past 25 years.

The program for supporting clinical research and expanding teaching while simultaneously maintaining good patient service began in 1961. The work has fallen into phases. First, came the revamping of the physical plant and modernizing the equipment of the Hospital. Next, came the revision of operational procedures to effect a more complete study and brisker turnover of patients. The impact of this effort was to reduce the mean length of hospital stay from 25 days to 16 days and to insure that every new patient received a comprehensive cancer detection examination. Over one-third more patients have been attended with no increase in bed capacity.

To receive private philanthropies and to administer research grants, the Missouri Cancer Commission and the Director of the Division of Health, acting as private citizens, chartered a non-profit Missouri corporation entitled the Cancer Research Center (CRC). The Governor, Attorney General and Director of the Division of Welfare approved this action and relinquished the land adjacent the Hospital to the CRC for research development.

IN planning the growth of the Research Center, the architectural firm of Hellmuth, Obata and Kassabaum of St. Louis has been engaged. An initial planning grant of $20,000 was given to the CRC by the Green Foundation of Mexico, Missouri. The work is now concentrated into three areas.

First, the CRC is the recipient of Cancer Clinical Research Grant ♯ 08023-01 from the National Cancer Institute for $1,646,000. Dr. Spratt and Dr. Bertis Westfall, professor of pharmacology at the University of Missouri, are co-principal investigators on this grant and will be co-directors of the facilities. The clinical staff of the Hospital and interested basic science staff at the University of Missouri are co-participants in this work. In this grant, $175,000 for alterations and renovation permitted the remodeling of the 5th and 8th floors of the present Cancer Hospital to accommodate a six-bed research ward for special problems in cancer management and study, a statistical unit, and pathological and biochemical research laboratories. The award date of this grant was November 1, 1964. The first several months of the fiscal year were spent in the active recruitment of staff and in planning with the architects. The final plans were cleared with the state office of Plans and Construction in June. B. D. Simon Construction Company of Columbia was awarded the contract and work began on July 6, 1965, with a scheduled 90 days for completion. Much research, particularly the statistical, was activated at the start of the grant period.

Second, the CRC is planning its first laboratory building. The intent is to build the Research Center around the present and projected research interests of the existing staff. The proposed building is a natural supplement to the present programs and will make available about 12,000 sq. ft. of working space including a much needed animal laboratory, radiation research, biostatistics and general laboratory space.

Third, the growing demands for cancer hospital services have made it necessary to consider the enlargement of the Hospital, particularly the outpatient department. The annual budget for fiscal year 1965-1966 contains an allotment for architectural planning money. With this available, work with the architects during the coming year will proceed to plan an enlargement of the outpatient clinic and the addition of service beds. The proposed enlargement will then be considered in the capital improvements budget for fiscal year 1966-1967.

FUTURE growth will follow the needs and problems of the cancer patient. The two unique strengths of the Hospital and the Center are the control exercised over a relatively non-mobile patient population and practical clinical, pathological, radiotherapeutic and surgical experience in caring for the cancer patient. The complete clinical, pathological and therapeutic documentation on each case and the ability of a Social Service Department to keep track of *all* patients permit the study of the natural history of cancer and the response to therapy with close scrutiny. The addition of a statistician, Dr. Francis Watson, to the staff through support provided by USPHS Grant ♯ 08023-01 will permit an increase in the number and quality of these studies. Participation in several of the cooperative studies sponsored by the National Cancer Institute is in progress and many intramural studies of the hospital and center are in progress.

The next area of research to be developed is in cancer detection. The rehabilitation of the cancer patient after treatment is also a natural area of interest as well as the care of the patient terminally ill with cancer.

EFSCH continues to play an important educational function in Missouri. The Hospital receives affiliate residents for short-term rotations from

Washington University, the University of Missouri and many of the approved resident training programs in Missouri, in addition to having a full-time resident staff of its own. Also, medical students from the University of Missouri take clerkships at the Hospital, and during the past several years students have come from many other medical schools around the country as Commissioned Officers in the Student Training and Extern Program of the Cancer Control Program of the USPHS. The staff of the Cancer Hospital and the CRC hold academic appointments. The staff conducts for referring physicians and consultants two professional programs annually to report on the clinical work of the Hospital. Staff members obligate themselves to making many cancer education speeches to county medical societies and lay groups through the extension teaching program of the University of Missouri and the American Cancer Society and by direct invitation.

During the 1964-1965 year, the staff attended 2,143 in-patients, maintaining a mean hospital stay of 16.5 days. The number of out-patient visits totalled 10,418. The staff presented over 20 papers at scientific meetings and published 37 papers and one book. At the end of the fiscal year, at least 54 clinical research projects were in progress. The published annual report containing a listing of current research and publications is available upon request to the office of the Medical Superintendent.

The staff expresses its appreciation to members of the medical profession for their assistance in behalf of the indigent cancer patients seen at Ellis Fischel and welcomes any suggestions which will result in the betterment of patient service.

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F. R. CROUCH, M.D., *Farmington*

Experiences with Pregnancy in The Anomalous Genital Tract

Case Reports

When one looks back on a quarter of a century of delivering babies under widely differing circumstances, ranging from home deliveries by flashlight to hospital deliveries under ideal conditions, one wonders how many unexplained or unrecognized obstetric incidents have occurred in this time and how many "reportable" cases have gone unreported for lack of time, facilities, recognition, wisdom or inclination. The subject of pregnancy in the anomalous genital tract became poignant recently because of the coincidence of having under my care simultaneously or in close succession three instances of pregnancies in anomalous uteri. While handling these cases, there kept coming to my mind the feeling, "I've been here before." To illustrate other problems of management, two other cases are thus resurrected from the files, and I am certain that the reader will be reminded of some or several from his or her own experience as these cases are described and discussed.

The Falls-Holt "Atlas of Obstetric Complications"[1] contains a long and beautifully illustrated chapter on "Pregnancy in the Bicornuate Uterus." It is strongly recommended for reading and study if this paper is effective in sparking some interest in this subject. Indeed, immediate reference to this classic work may well spare the reader the task of checking the inadequacies of the reports to follow! Incidentally, the first paper written on this subject in the English language was presented by Dr. Frederick H. Falls in 1928 to a meeting of the American Association of Obstetrics, Gynecology, and Abdominal Surgery.

Anatomy and Development

It is not the purpose of this report to describe the origins of these peculiar structures. This has been done elsewhere and in great detail.[1, 2, 4, 8] Understanding the cases presented will be made easier, however, if we outline the development of the female genital tract.

In embryos of two months, the Müllerian ducts lie side-by-side in close approximation and end blindly in the Müllerian tubercle, a projection

A paper which calls attention to the anomalous genital tract and its role in abortion, threatened abortion, prematurity and delivery. The author presents several cases illustrating associated problems; he reviews appropriate literature; briefly notes the pertinent embryology; and re-presents a simplified system of classification which merits much wider use in future reporting on this subject. Doctor Crouch is in the private practice of medicine with the Medical Arts Clinic, Farmington, and the Bonne Terre Hospital, Bonne Terre.

into the median dorsal wall of the primitive urogenital sinus located ventral to these ducts. The caudal ends of the ducts, even before this, have combined into the single primordia of the uterus and vagina. The paired cranial portions of the Müllerian ducts become the uterine tubes, whose ends later descend from the level of the third thoracic to that of the fourth lumbar vertebra. Uterine fundus and corpus are formed from the middle-transverse portion, the cervix and vagina from the caudal-longitudinal portion of these fused structures (Fig. 1).

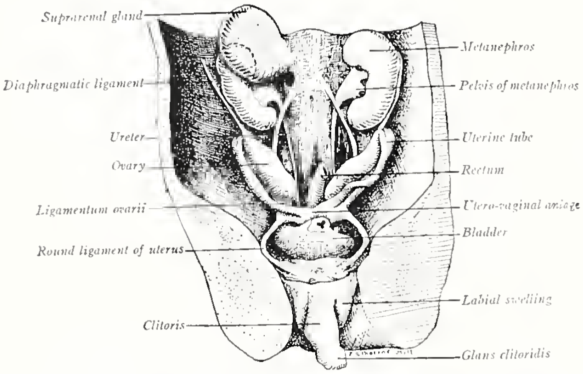


Fig. 1 (After Arey) Ventral dissection of a female fetus of nine weeks to display the urogenital organs in situ. (Prentiss)

Failure of fusion of the middle-transverse portion to form the single uterus, or of the caudal-longitudinal portion to form the cervix and vagina, or partial fusion to an intermediate stage somewhere along the way, accounts for the anomalies which are encountered clinically.

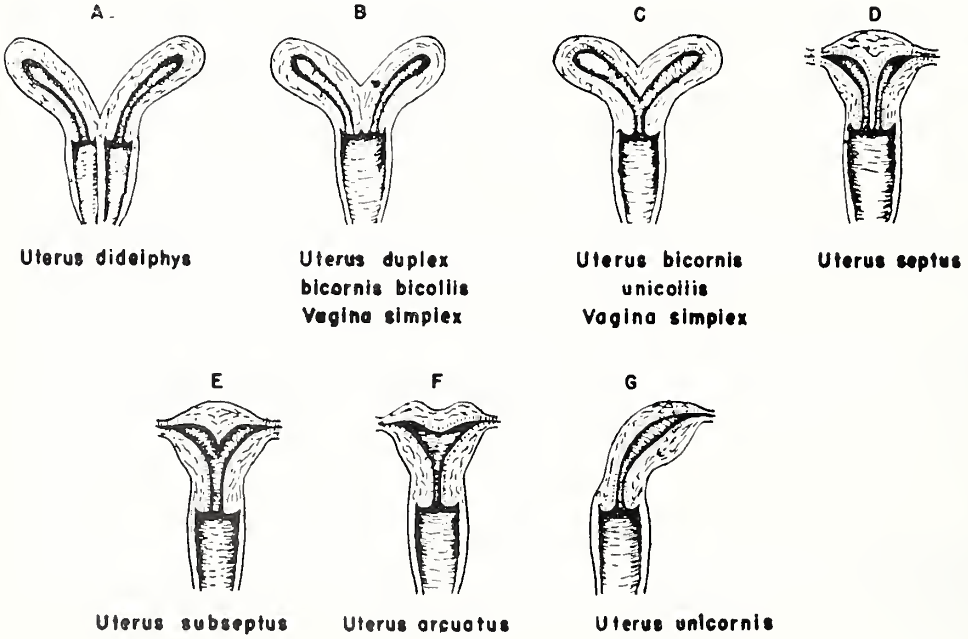
These anomalies have been classified by Jarcho[8] in the following fairly simple manner. His schematic drawings are reproduced here (Fig. 2).

CASE REPORTS AND DISCUSSIONS

Case 1. An 18-year-old, Group A, Rh negative, Para 0, Gravida 1, was first seen for prenatal care in April 1949. Her expected date of confinement was November 6, 1949. On August 30, she delivered a 4 pound, 2½ ounce, stillborn, premature baby. The pregnancy was in the left cornu of a bicornuate uterus, a frank breech presentation. The placenta had separated prematurely. The uterine deformity was not detected until after the delivery, when the notch in the superior margin of the fundus was first noted.

At age 19, she attained a second pregnancy which was again a breech in the left cornu of her bicornuate uterus. Delivery was uneventful and at term on December 3, 1950.

At age 22, her third pregnancy was complicated by intermittent bleeding and cramps in the early weeks, for which she was treated with oral estrogens (Ethinyl estradiol), progesterone (Oralutin, P.D.), and bedrest. Pregnancy tests became negative, uterus failed to grow, and it was evacuated by the piecemeal removal of the degenerated products of conception under general anesthesia on June 14, 1953. No septum in the bicornuate uterus was found. Gestation was about 12 weeks in length. Six weeks later, the patient was seen with intractable backache of one day's duration, intermittent vaginal bleeding and some low abdominal cramping. A piece of semi-necrotic bony tissue was removed from the cervical canal with immediate relief of the backache.



Uterus didelphys

Uterus duplex bicornis bicollis Vagina simplex

Uterus bicornis unicollis Vagina simplex

Uterus septus

Uterus subseptus

Uterus arcuatus

Uterus unicornis

Fig. 2 (After Jarcho) A useful classification of anomalies of the uterus.

Her fourth pregnancy, at age 24, was complicated early by vaginal bleeding. The dilatation and curettage done on March 7, 1955, were productive of a small amount of tissue revealing "Focal endometritis, probable old incomplete abortion." Again, there was no evidence of a uterine septum at operation.

Her fifth pregnancy, at age 25, was again in the left cornu of the uterus. It was complicated by first and second trimester spotting and bloody discharge, treated with prolonged rest and the then available oral progestogens. The normal full term female infant was delivered spontaneously from a double footling breech presentation on April 29, 1957.

Examination of the placenta revealed a marginal area of necrosis which apparently was the site of the bleeding which occurred in the first two trimesters. One could speculate that this separation was in the inadequate placental site of the left cornu and near enough to the cervical canal so that the blood escaped by this route, rather than dissecting toward more vital areas which would have jeopardized the life of the fetus. Post-partum course as usual was uneventful, the uterus returning to its former retro-displaced position.

Sixth pregnancy at age 27, was outstanding because of its normalcy. First prenatal visit was at three months when she reported a small amount of bleeding beginning the previous day. There were no cramps or unusual backache, and the bleeding stopped promptly. She had a normal spontaneous delivery on January 1, 1959, at the 36th week. The female infant was in the left sacro-anterior position in the left cornu of the uterus. No effort to delay labor was made.

Discussion: This patient had three reasons for expecting some type of difficulty in attaining pregnancy or in reaching term: (1) a retroversion, (2) a potential Rh problem and (3) a bicornuate uterus. However, fertility was unusually high, and the retroversion *per se* was never a problem at any stage. The Rh picture did not become a problem, as evidenced by negative titres and Coombs' tests, even through her sixth pregnancy and after the delivery of at least two infants who were Rh positive.

The bicornuate uterus was nevertheless a major handicap. The only successful pregnancies of six were three of the four wherein the infant was in breech presentation in the left cornu of the uterus. It was postulated by Falls that distortion in the myometrium due to the basic pathogenesis of the anomaly and abnormalities in its circulation and innervation may result in an abnormal area that is available for nidation and nutrition of the trophoblast. Thus, the placental site may be inadequate, and the embryo dies. There is also the likelihood that nidation will occur at a point that is mechanically incompatible with continued growth of the fetus. This would seem a likely explanation for this girl's success in reaching term only with breech presentations in the left cornu of her uterus. The premature separation of the placenta in her first pregnancy was compatible with the theory of basic abnormalities of the circulation. Reasons for bleeding at all stages of all her pregnancies thus may be assumed to be on this basis, and the findings in her first and fifth pregnancies particularly bear out this conclusion.

Case 2. A 22-year-old, Para 0, Gravida 1, had a completely uneventful pregnancy until the last month of gestation. About three weeks before term, it was noted that the infant was in breech presentation. External version to vertex was easily done with no change in fetal heart rate or quality at any stage. However, the vertex failed to stay in the pelvis, so a week later the infant was found to be in transverse lie. This again was easily converted to vertex then and on two subsequent occasions. Meantime, the patient had developed a mild hypertension, severe headaches and a trace of proteinuria. She was hospitalized and treated with rest and diuretics. Then amniotomy was done, with the vertex pressed well into the superior strait during the procedure. Vertex stayed well engaged, and labor proceeded without incident. The baby weighed 6 pounds, 10 ounces and was in all ways normal. No note of uterine abnormality was made, and I feel sure that I did not suspect it.

Her second pregnancy occurred almost seven years later, and its late weeks were almost identical with those of her first pregnancy except for the absence of toxemia. Again the infant's position changed repeatedly until finally, after X-ray determination of fetal position and maturity (Fig. 3), the same procedure was done. The amniotomy was followed promptly by excellent labor, progress and low-forceps delivery of a 9 pound boy. The notched uterus was this time easily noted.

Discussion: This uterine abnormality could be classified as a mild form of bicornuate uterus (uterus arcuatus of Jarcho)[8] which produced problems only as the infant approached term. This type is said to account for about 12% of all cases of transverse lie, the convex fetal back and shoulders occupying the concavity of the lower segment. There apparently was no problem of placentation, since there was no early bleeding in either pregnancy. However, the longitudinal dimension in each instance was apparently not quite large enough to accommodate the longitudinal position of the fetus. Thus both fetuses had a tendency to assume a transverse lie, or alternated between breech and transverse lie. At no time was there suggestion of low implantation of placenta or of placenta previa, and this factor, as well as prolapse or entanglement of

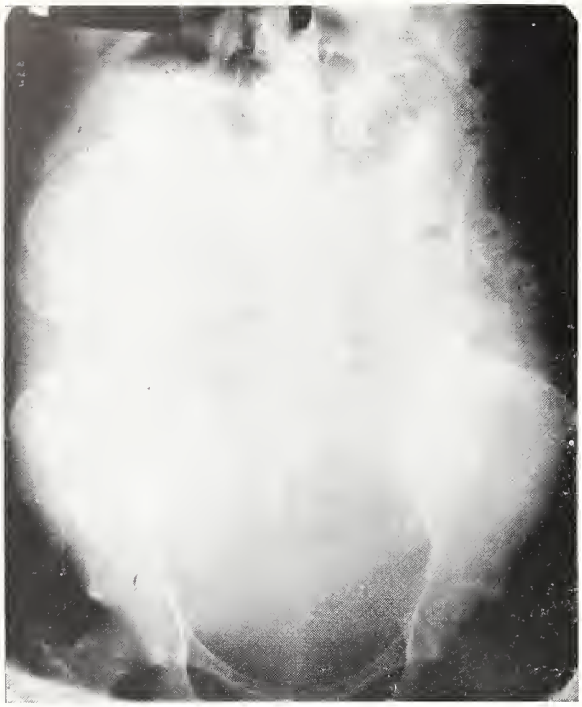


Fig. 3 X-ray of Case 2 near term of second pregnancy. Note fetal position and the distal femoral epiphysis.

cord, were carefully considered in the active management of each delivery. The larger-than-average second fetus accentuated the factor of shortage of longitudinal space.

Case 3. A 34-year-old, Para 0, Gravida 1, was seen for her first prenatal visit on January 4, 1961. Ten years previously, she had been told by a physician that her "womb had dropped" and that she would never attain a pregnancy. In the spring of 1960, she had vaginal bleeding for 18 days. Another physician saw her, told her that she had "two uteruses" and stated that this was probably the reason for no pregnancies.

Her last period had been on July 25, 1960. She felt life on December 4, 1960. When seen by me on January 4, fetal heart tones were clearly audible and movements were felt. However, I completely failed to find a vaginal septum, noted only that there was "stricture of the upper vagina" and that it would be important to watch for deep vaginal tears at delivery.

She was seen only one more time before onset of labor, and vaginal examination was not repeated. On May 4, 1961 she developed backache and bloody show, but had only about one cm. dilatation on rectal examination and was having no active contractions. She was hospitalized that day for "rest and observation." A few hours later, she suddenly developed hard contractions and delivered precipitately after 14 minutes of active labor. A small anterior external laceration was noted, but the hymenal ring was otherwise intact. However, the remnants of the vaginal septum presented an alarming picture which was finally made clear by examination under anesthesia and surgical consultation. The septum had been completely disrupted by the passage of the 3 pound, 9 ounce fetus. No evidence of trauma to the bladder, rectum or cervix was found, and therefore no repair was done. When seen at eight weeks postpartum, the patient had no dyspareunia or other complaints. The remnants of the septum were visible on speculum examination. Two cervices were visible, the right one larger than the left. No therapy was advised.

Her second pregnancy, two years later, was recognized earlier and naturally was observed with much greater insight. Her last menstrual period was July 9, 1962, and her expected date of confinement was calculated to be April 16, 1963. She was hospitalized December 30, 1962, because of bearing down sensations and descent of the presenting part to the level of the ischial spines with the cervix about 50% effaced. No labor occurred. She was therefore allowed only modified activity for the remainder of her pregnancy, but spent the time at home except for weekly visits to the office. Since she lived 20 miles away with rough roads much of the way, this was perhaps a more-than-average risk; but economics and geography are both calculated factors in decisions reached in rural practice. She likened herself to a "brood mare" and faithfully appeared at the appointed times, spending the interims mostly in bed.

On March 30, 1963, about two weeks before the expected date of confinement, the cervix was found to be three to four cm. dilated. X-rays showed the presence of at least one distal femoral epiphysis. Induction by amniotomy was performed, and delivery occurred uneventfully about two and one-half hours later. The male infant weighed 6 pounds, 14 ounces. Post-partum course was uneventful. The patient failed to appear for her six weeks' examination. When she appeared for a "routine check" on December 9, 1964, she mentioned that before and during menses she had some protrusion of tissue which proved on examination to be remnants of the septum. No symptoms were present, otherwise, and there was no dyspareunia. I could identify only one cervix. The Papanicolaou smear was Class I-Negative. No therapy was suggested for the present.

Discussion: It is interesting that the initial problem of this girl was sterility rather than dyspareunia. When the two uteri were found, the anomaly was suggested as the cause of sterility, even though it produced no apparent difficulty in coitus. After conception occurred, the possibility of pregnancy was not entertained seriously by patient or physician until fetal movements were felt. By then the patient had consulted a third physician (FRC) who "wisely" diagnosed the pregnancy but completely missed the anomaly! Eight weeks after her first delivery, the two cervices could be seen clearly. About one and one-half years after her second baby, the second cervix was apparently involuted to the point of not being definitely identified by careful vaginal examination. No excuses are offered for the original comedy of errors. The uterus is the uterus didelphys of Jarcho (Fig. 2 A), but apparently with asymmetrical development of the fundi.

This patient is now in the middle trimester of her third pregnancy, which to date has been completely uneventful.

Case 4. A 19-year-old, Para 0, Gravida 1, came for her first prenatal visit on March 21, 1964, her last period having been December 22, 1963. History was interesting in that at the age of 16 she had had "black-out spells" while living in New York. At a U. S. Public Health Service Hospital, cardiac catheterization was done and a diagnosis of patent interventricular septum was made. Four years previously, she was in an automobile accident following which splenectomy and appendectomy were performed.

Examination on March 21, 1964, revealed a loud systolic murmur and thrill over the entire precordium, loudest in the fourth intercostal space at the left sternal border. The AP diameter of the chest was visibly increased. On vaginal examination, a septum was found to extend from the proximal end two-thirds of the way to the introitus. At the apex of the right portion of the vagina was the blue cervix and the two-to-three times enlarged pregnant uterus. At the apex of the left portion were a tiny cervix and palpable uterus of minimal size. No other anomalies were found. The patient was well adjusted to and quite philosophical about her peculiarities! She had not previously been aware of anomalies below the diaphragm. Menstrual periods had been irregular since menarche at 13, but no investigation had been conducted. There had been no dyspareunia.

On May 16, 1964 she began to have a small amount of vaginal bleeding. Examination revealed that this was from the left non-pregnant uterus. There was no bleeding from the right uterus. The bleeding subsided without cramps or specific treatment after a few days.

Bleeding recurred in slightly greater amount beginning about June 17, and cramping began the next day. The patient was hospitalized for isoxsuprine* and observation. When the cramps and the bleeding both subsided, she was returnd to her home for modified activity and continued isoxsuprine orally. The minimal amount of blood found in the vagina could not be traced definitely to either side, since it was found only in the distal third of the vagina.

Labor began spontaneously at 6:30 a.m., September 27, 1964. It was quite rapid and uneventful until the vertex reached the midpelvis. Then its descent was delayed by the non-yielding distal septum. Careful incision of the septum permitted prompt descent and delivery of the vertex with low-forceps over a generous right mediolateral episiotomy. The placenta was removed manually when it failed to separate spontaneously, and at this time the right uterine cavity was carefully explored for injuries or placental remnants.

This patient returned for her final examination on November 9, 1964, at which time the episiotomy was healed. Only dorsal and ventral ridges remained as evidence of the previously intact septum. The right fundus uteri was small and anterior, the cervix healed and clean. The left fundus and cervix were involuted and atrophied to the point of being almost undetectable. She was in good spirits, exhibited no tenderness, and requested only "birth control pills"!

Discussion: It is interesting that in neither Case 3 or 4 was dyspareunia a complaint before or after the pregnancies. Indeed, there was no suspicion of the presence of any abnormality until one was unable to attain a pregnancy and the other had already done so. The errors of communication and diagnosis in Case 3 may well have avoided useless worry if not surgery. Certainly these two cases illustrate again "Mother Nature's" tremendous ability to overcome obstacles to the propagation of the species.

In Case 3, where even after labor began the condition was not known, the septum was probably the factor that delayed descent of the presenting part. In Case 4, the septum was incised cleanly at this point and the infant's exit was more gracefully accomplished.

As the pelvic relaxation of atrophy associated with menopause approaches, the irregular septal tags in Case 3 are becoming symptomatic. The vaginal septal remnants of Case 4 are unlikely, even with advancing years and subsequent pregnancies, to produce symptoms because the incision was made cleanly.

Case 5. A 22-year-old, Para 3, Gravida 4, came for her first prenatal visit on May 18, 1960. Details of her first pregnancy and delivery are not available, but it is known that there was a breech presentation with premature rupture of the membranes, a prolapsed cord and delivery of a dead fetus from below. In her second pregnancy, she was admitted to an Air Force Hospital on August 22, 1958 with membranes ruptured, pulsating cord prolapsed and a cervix 3 cm. dilated. Emergency Caesarean section was done and a live baby was delivered. Exploration of the uterine cavity revealed a "septum measuring approximately 5 inches in length, extending from the dome of the fundus toward the cervix. The patient was pregnant in the left cornu."

With this history, plans were made to terminate her third (1960) pregnancy by Caesarean section. The prenatal course was complicated by hepatitis in the last weeks of the first trimester, and by severe respiratory infections which began a few days before her premature delivery. Labor began at about 33 weeks. The presence of the respiratory infection, the rapid course of normal labor and the vertex presentation of a premature infant ruled out Caesarean section and its attendant hazards. The 4 pound, 4 ounce male infant did well after a rather poor start.

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* Isoxsuprine-Vasodilan, Meade.

At age 26, the patient appeared with her fourth pregnancy. Her expected date of confinement was October 30, 1964. Uterine growth was measured by threefold McDonald measurements, after X-ray at 28 weeks revealed a breech presentation in each cornu of her uterus (Fig. 4). The twins were back to back with a head in each cornu.

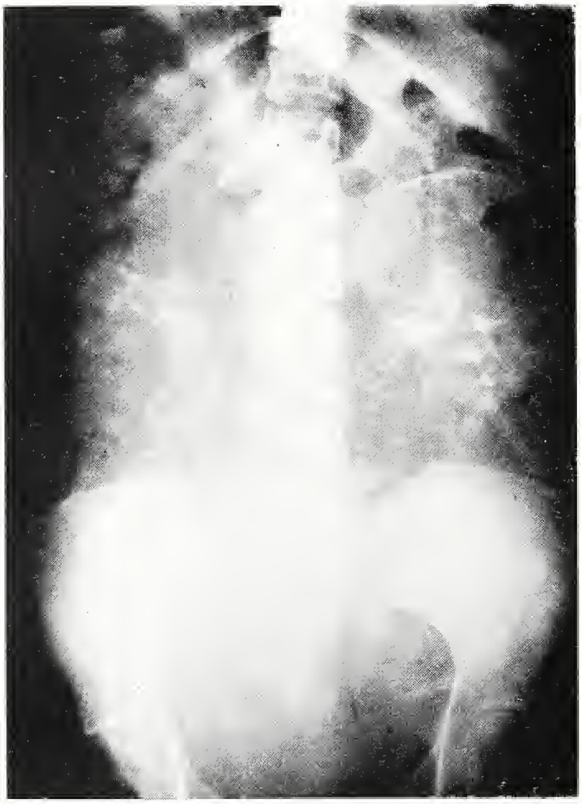

Fig. 4 X-ray of Case 4 at about 28 weeks' gestation. Note symmetry of positions in light of known uterus bicornis unicollis.

Following are the McDonald measurements:

Date	Right	Middle	Left
Sept. 2	30 cm.	27 cm.	30 cm.
Sept. 9	30 cm.	27 cm.	31 cm.
Sept. 23	34 cm.	27 cm.	35 cm.
Sept. 30	35 cm.	27 cm.	36 cm.

On September 9 she began to have irregular but painful contractions. She was hospitalized for a period of ten days, during which time the cervix was found to be about 30-50% effaced and one foot of one twin was found moving about inside the intact amniotic sac which protruded into the patulous cervix. Operating room was alerted and blood readied during the entire ten day period. Toward the end of this time the foot was apparently retracted from the cervical canal, the contractions subsided and no further progress of descent or dilatation occurred. The patient was sent home for continued observation on September 19, 1964.

During the ensuing 20 days, the abdomen of this slight (normal weight 90 pounds) small-boned girl continued to grow (see McDonalds), so that by September 30 the situation was mechanically unbearable. X-ray showed the fetuses to be of approximately eight months' gestation and in the breech positions previously observed. The risk of uterine rupture if pregnancy were allowed to continue or if labor were allowed to occur, was weighed against that of prematurity and the usual operative hazards of Caesarean section. It was decided to deliver by Caesarean section.

On October 2, 1964, section was performed under gas-oxygen-ether anesthesia. Uterine incision was a low cervical vertical one. The right cornu was emptied first. Both infants were extracted with ease and they breathed and cried spontaneously and loudly. Placentae were removed with cords intact, the latter being sectioned only after pulsations ceased. "The septum was noted to be quite thick and extending from the fundus downward for a distance of 5½ to 6 inches. Its margins were somewhat blunted and concave. An anterior and superior indentation in the uterus gave it a rather grotesque appearance after extraction of the infants." The postoperative and post-partum course was completely uneventful. The infant boy and girl (weights 5 pounds, 1½ ounces and 5 pounds, 4 ounces respectively) thrived on routine newborn care and were discharged to the home on their eighth day of life.

Discussion: This uterus had been seen and described accurately, and the description was verified at this delivery. It is, according to the classification of Jarcho, a typical uterus bicornis unicollis (Fig. 2, C) with a single bi-lobed uterine cavity, single cervical canal and a well-developed intrauterine septum. The presence of double-ovum twins, each in double-footling breech presentation, presented a bizarre picture and a fascinating problem of management.

Tompkins,[3] in his "Comments on the Bicornuate Uterus and Twinning," speculates interestingly on the causal relationship of anomalous uteri and twinning. Twinning is considered a function of the organism. Its inheritance as a functional trait is more difficult to understand than it would be if it were an anatomic trait, he states. Why should a function appear in one among 84 women (the generally accepted incidence of twins) unless there is also an anatomic characteristic which appears with comparable frequency? He therefore inquired of 11 private patients with severe uterine anomalies whether there were twins in their families. To his amazement, he learned that of these 11 women, all of different families, three were themselves identical twins, and to one of these he had delivered a set of twins. These were selected cases in that all had been seen because of inability to conceive or inability to carry to term. Thus, hysterosalpingograms were made and the anomalies discovered.

This patient states that her mother is a twin but that there are no other twins closer than a "distant cousin." No consistent twin pattern is found on review of family histories of the other cases here reported, although a paternal uncle of one had two sets of twins and there are twins on the paternal side of one other of the group.

Twins in completely divided uteri have been recorded fairly commonly. Baker *et al.*[6] reported six cases of twins in 127 pregnancies in the presence of uterine reduplication. (Uterus didelphys-A and Uterus duplex-B, Jarcho).

DISCUSSION

Fenton and Singh[9] in 1952 presented what was then the largest review of cases of pregnancies in the anomalous uterus collected from a single hospital (Sloane Hospital, New York). Their statistical summary is reproduced here (Table 1) to demonstrate as nearly as possible the importance of these anomalies to the individual obstetrician, in the opinions of these authors. Their incidence of twins in anomalous uteri was one in 73.

TABLE 1*

	Congenital Abnormality %	*"Normals"* %
Corrected abortion rate	16.5	5-6
Viable birth rate	66.4	93.1
Term birth rate	56.1	85.0
Abruptio placentae	5.5	1.2
Unexplained vaginal bleeding	7.4	1.9
Toxemia	11.1	14.2
Hydramnios	0.8	0.6
Breech and transverse presentations	17.5	3.9
Premature rupture of membranes	44.0	26.2
Premature labor	15.2	6.8
Intrapartum uterine inertia	20.3	3.2
Cervical dystocia	2.5	0.8
Operative deliveries	50.0	20.0
Uterine inertia, third stage	9.0	1.9
Postpartum hemorrhage	5.2	0.4
Curettage of retained secundines	12.9	0.8
Corrected fetal mortality	8.5	0.9

* Fenton and Singh.[9]

Superfetation in double uteri was not found by Fenton and Singh. Reference is made in the literature by Bainbridge[10] to Dubierre's case of one full-term delivery on July 16, 1870 followed by a second full-term child on October 18, 1870, and to Jellinghaus's two cases, the first having a fourth month abortion from one uterus followed by a full-term delivery from the other, the second delivery a full-term white baby from the "left horn of her uterus and a full-term black infant from the opposite horn two months later."

Williams and Cummings[11] in 1953 reported a 56-day interval between delivery of twins from a uterus bicornis bicollis, vagina simplex (Jarcho-B). In 1959 Kennedy[12] reported a twin pregnancy in a similar uterus where a twin with infarcted placenta was delivered with resolution of a preeclamptic toxemia, followed in 12 days by delivery of a second twin Carr[13] reports in 1963 the spontaneous delivery of twins in a "uterus bicornis bicorpis unicollis." The babies weighed 4 pounds, 15½ ounces and 6 pounds,

(Continued on page 995)

A 16-mm. color film on the causes, detection and treatment of *erythroblastosis*—a disease in the newborn resulting from the incompatibility of blood between mother and child—has been prepared by Pfizer Diagnostics, department of Chas. Pfizer & Co., Inc. The film is now available for showing to hospitals and blood banks throughout the country upon request. The 36-minute sound film provides a thorough and professional coverage of *erythroblastosis fetalis* and should be highly informative for both experienced and student medical technologists. It shows an actual exchange blood transfusion and the complications that occur if erythroblastosis is not detected in time and properly treated. The film also explains the importance of routinely screening all prenatals, regardless of their Rh blood factor, for irregular antibodies capable of causing erythroblastosis. Requests to view the film should be referred to local Pfizer Diagnostics salesmen or by writing to Pfizer Medical Film Library, 267 W. 25th Street, New York 1, N. Y.

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Serum Creatinine and Blood Urea Nitrogen As Measures of Renal Function:

A Computer-Assisted Study

A report on the use of data-processing equipment in studying the interrelationship of BUN and serum creatinine and their value in the diagnosis of renal disease. The paper should be of interest to the practicing physician not primarily for the information it contains but for the long range implications which it raises concerning the possible use of laboratory "patterns" in medical diagnosis. Doctor Van Peenen is Associate Professor of Pathology and Doctor Lindberg is Assistant Professor of Pathology and Director of the Medical Center Computer Program, University of Missouri School of Medicine. This work was supported in part by Grant No. 1-50-1-05387 and HM 00374 of the USPHS.

FOR TWO YEARS the University of Missouri Medical Center Computer Program has been processing and storing all laboratory results reported from the clinical chemistry section of the Central Pathology Laboratory. This information is now being studied to uncover new uses for laboratory data and to determine the value of different tests in the diagnosis and management of disease.

The use of laboratory values in diagnosis has developed empirically. Observations by physicians have demonstrated that laboratory values are elevated above normal range in some diseases, decreased in others and that two or more tests may create a pattern of results characteristic of a given disease or functional state. These observations are usually derived from small numbers of patients, but are nevertheless generally valid.

Computer-generated data can confirm and amplify the empirical observations of the past. Data-processing equipment also makes it possible to explore all the many possible interrelationships of thousands of different laboratory values with clinical diagnosis or patient course. The task would be too great for the unaided human mind.

This paper reports the use of data-processing equipment to study a few interrelationships of the two commonly used tests of renal function, the serum creatinine and the blood urea nitrogen.

MATERIALS AND METHODS

In this laboratory the blood urea nitrogen is determined on oxalated whole blood using the Autoanalyzer* and the diacetyl monoxime method recommended by the manufacturer of that instrument.[1] Serum creatinine is also determined automatically, using a modification of the alkaline picrate method of Jaffe.[2] The standard deviation for blood urea nitrogen (BUN) is ± 1 mgm. % and for serum creatinine, ± 0.2 mgm. %.

All computer-stored results for both tests were screened by an I.B.M. model 1410 computer which selected all patients having both a blood urea nitrogen and a serum creatinine performed on the same day. Both values in this "test pair" therefore reflected the same renal functional state.

There were 1,488 test pairs which met this criterion of being simultaneously performed. They represented 974 different patients since many patients with renal disease had the two tests performed simultaneously several times. There were 18 persons with more than eight test pairs each, almost all of them patients in whom both creatinine and BUN were elevated.

For purposes of this study, arbitrary limits of normal were set for both creatinine and BUN. These limits were 0.4-2.0 mgm. % for creatinine and 4-25 mgm. % for BUN. Both ranges are compatible with normal ranges reported from other laboratories[3] and seem to have been well chosen for ours as well.

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* Trademark of the Technicon Company, Chauncey, New York.

The computer was programmed to divide the sets into all possible combinations of normal, higher than normal or lower than normal. Four combinations were actually generated, as shown in Tables 1 and 2.

Chart numbers and identifying data were printed out for all patients. Selected charts were reviewed in detail for diagnosis and patient course. Diagnoses accepted were those made by the attending physician. In many cases these were confirmed by autopsy or biopsy.

The BUN/creatinine ratio was calculated for each patient by dividing the BUN in mgm. % by the serum creatinine in mgm. %.

In order to ascertain the significance of minor elevations or "high normal" results for both serum creatinine and BUN, 24 charts were reviewed in which values of BUN ranging from 23-25 mgm. % had been reported. These were classified into two groups of 12 each by whether or not the creatinine was also mildly elevated or "high normal."

RESULTS

The results are shown in Tables 1, 2, and 3. Four groups of patients were developed. Those in Group 1 had both a normal creatinine and a normal BUN. There were 776 test pairs in this group, comprising 52% of the total and representing 647 different patients. Group 2 contained those patterns in which both creatinine and BUN were increased. There were 501 test pairs, 34% of the total, representing 162 different patients. Group 3 included all test pairs in which the BUN was elevated but the creatinine was normal. There were 174 pairs representing 133 patients. Group 3 patterns accounted for 12% of the total number. Finally, Group 4 contained 37 patterns comprising 2% of the total. In this group the creatinine was elevated while the BUN was within normal limits. After reviewing the patients' histories, it appeared that 20 of the patients in Group 4 probably did not really belong in it because subsequent creatinine determinations had failed to substantiate the elevation. We are forced to conclude that these 20 reports of elevation of serum creatinine were in error. It is regrettable that the probable errors could not have been detected and corrected by continuous computer analysis at the time they occurred. Had this been possible, we would now be able to explain exactly how the laboratory errors arose.

In all groups, the BUN/creatinine ratio sometimes fell outside the arbitrarily set limits of normal, a range of 8 to 20. There was no correla-

TABLE 1

	Number of Test Pairs	*Per Cent of Total*	*Number of Patients*
GROUP I BUN nl. Creatinine nl.	776	52	647
GROUP II BUN incr. Creatinine incr.	501	34	162
GROUP III BUN incr. Creatinine nl.	174	12	133
GROUP IV BUN nl. Creatinine incr.	37	2	32
Totals	1,488	100	974

TABLE 2

Classification	*Number of Test Pairs*	*Number of Test Pairs with BUN/Creatinine Ratio:* < 8	>20
GROUP I BUN nl. Creatinine nl.	776	3	52
GROUP II BUN incr. Creatinine incr.	501	25	20
GROUP III Bun incr. Creatinine nl.	174	0	41
GROUP IV BUN nl. Creatinine incr.	37	7	0

TABLE 3

	PATIENTS WITH:		
Classification	RENAL DISEASE	PROBABLE RENAL DIS.	NO RENAL DISEASE
12 PATIENTS BUN 23-25 mgm. % Creatinine <1.0 mgm. %	5	2	5
12 PATIENTS BUN 23-25 mgm. % Creatinine >1.6 mgm. %	4	5	3

tion of BUN/creatinine ratio with any particular diagnosis or functional state.

Probable or proved renal disease was present in 16 of 24 patients with "high normal" BUN. The disease most commonly present was chronic pyelonephritis.

DISCUSSION

Thirty charts in each group were randomly spot-checked. No case was found in which an elevation of serum creatinine was not accompanied by some form of renal disease. There were several cases in which mild renal disease was not accompanied by a rise in creatinine or in BUN. Nevertheless, it is probably safe to assume that all patients in Group 1 were free of significant renal disease while all patients in Group 2 were not. In both groups, either the creatinine or the BUN could have given this information and could therefore have served as the single screening blood test for renal disease. This is in full agreement with previous experience.[4]

Although this is true for Groups 1 and 2 which represent 86% of the total, it is not true for Group 3 which is significantly large. This is the group that would ordinarily be considered to have prerenal azotemia rather than intrinsic renal disease. Every fifth chart in this group was reviewed. All but four of the patients had some form of heart disease with decompensation, severe burns, neurological conditions involving muscle wasting or severe dehydration. Four patients had mild obstructive disease of the urinary tract, two having transitional cell carcinoma of the bladder and two having benign prostatic hyperplasia.

Again, the prevalent clinical impression is fully confirmed. Patients with elevated blood urea nitrogen and normal creatinine have prerenal azotemia. For this large group of patients, BUN alone would have given misleading information about the presence of renal disease. However, it should be pointed out that prerenal azotemia could not have been detected if creatinine alone had been relied upon as a measure of nitrogen load and the body's ability to cope with it.

The degree of BUN elevation can be of some benefit in distinguishing patients of Group 2 from those of Group 3. No patient in Group 3 had a BUN over 90 mgm. % and less than 5% of all patients in the group had BUN above 60 mgm. %. Therefore, the presence of a BUN over 60 mgm. % is strong presumptive evidence of the presence of renal disease. Unfortunately, the converse is not true. Of 501 test pairs in Group 2, 135 had BUN values ranging from 25-59. Since these patients all presumably had some renal impairment, a relatively low BUN is not diagnostic of prerenal azotemia. This also is in complete accord with past experience.[4]

The results gained from the first three groups studied is in accord with clinical opinion and give no new information. The BUN is frequently elevated in nonrenal diseases and is not necessarily elevated to a greater degree in renal disease. Serum creatinine will predict the presence of renal disease in nearly 100% of patients while urea nitrogen will do so in only about 86%.

The smallest group, Group 4, proved to be of greater interest. Of the 37 patients placed in this group by the computer only 17 truly belonged in it. The others had serum creatinine values reported which were factitiously high because of laboratory error. Based on study of this group, it appears that any pair of results in which the serum creatinine is greater than 3.3 mgm. % while the BUN is less than 26 mgm. % should be considered a laboratory error.

This can be useful both to laboratory directors and to clinicians. In systems, such as that planned for this hospital, where laboratory results will be automatically transmitted from laboratory instrument to clinical floor, the processing computer can be programmed to reject patterns which have a high likelihood of being in error. This is built-in quality control. If such a result were reported, the clinician should look upon it with considerable skepticism.

The 17 patients remaining in Group 4 had serum creatinines ranging from 2.1 to 3.3 mgm. %. Ten of these patients were diagnosed as having chronic pyelonephritis, a diagnosis several times confirmed at autopsy or by biopsy. Most of them developed elevations in BUN later in the course of their disease. This high incidence of chronic pyelonephritis does not seem likely on the basis of chance alone and suggests that the pattern of mildly elevated serum creatinine in the presence of a normal BUN may be diagnostically specific for chronic pyelonephritis once laboratory error has been ruled out.

Finally, patients with "high normal" levels of BUN have a very good chance of having some degree of renal functional impairment. This is true although age alone may cause mild elevations of the BUN and most of the patients in this series were elderly. Advanced age does not normally give a rise to the level of 23-25 mgm. % in most patients. Repeated finding of BUN in this range should make one suspect the possibility of renal disease, even in an elderly person.

SUMMARY AND CONCLUSIONS

1. Data-processing equipment was used to study the interrelationship of blood urea nitrogen (BUN) and serum creatinine and their value in the diagnosis of renal disease.

2. An analysis was made of 1,488 simultaneous determinations of creatinine and BUN. The determinations were performed on 974 different patients.

3. An elevation of creatinine correlated with impairment of renal function in nearly 100% of cases.

4. Elevation of BUN correlated with impairment of renal function in 86% of cases. In 12% the elevated BUN was due to prerenal azotemia but in no case did prerenal azotemia cause a BUN elevation greater than 90 mgm. %. In only 5% of cases of prerenal azotemia was the BUN greater than 60 mgm. %.

5. The BUN/creatinine ratio was no more useful diagnostically than the serum creatinine alone.

6. Serum creatinine values in the range of 2.1-3.3 mgm. % accompanied by a BUN of less than 26 mgm. % are frequently factitiously elevated due to laboratory error. However, when error can be ruled out, they correlate well with the presence of chronic pyelonephritis.

7. BUN in the high normal range (23-25 mgm. %) is suggestive of early or compensated renal disease.

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Experiences With Pregnancy (Cont'd)

9 ounces. The author states that these are the only ones on record delivered "normally" from a uterus of this particular kind, there having been one other case in a uterus exactly like this delivered prematurely at 29 weeks, both babies dying in the first week. The uterus described is apparently a Jarcho-B-Uterus bicornis bicollis, vagina simplex.

Dr. Falls,[5] in a 1956 address before the South Atlantic Association of Obstetricians and Gynecologists, emphasized the atavistic nature of the bicornuate uterus, the disproportionate number of complications of pregnancy and labor that occurs in such cases, and the importance of their early recognition, even though he strongly emphasized the practice of "watchful expectancy" in their clinical management. In the ensuing discussion, Dr. Frank Lock pointed out their importance in the incidence of infertility and of late abortion, but said that he felt that the other complications of pregnancy in anomalous uteri occurred in the same order of frequency with which they occur in normal individuals.

Thus, variations in reports and estimates compound the need for a uniform system of classification of these anomalies as well as for increased alertness and interest by those who deliver babies. Jarcho's simplified one is suggested for this purpose.

SUMMARY

Several cases of pregnancy in the anomalous uterus are presented. Their management is discussed individually. Similarities and differences are mentioned in the course of these discussions. Larger and more detailed series are cited. Special refernce is made to the monumental work of Falls and Holt. It is hoped that the present report will stimulate others to remember the anomalous uterus, especially when dealing with so-called habitual abortions, abnormal or unusual presentations, antepartum bleeding and trauma of the birth canal.

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Pulmonary Vascular Alterations In Mitral Stenosis

Surgical relief of mitral stenosis by valvotomy has provided an opportunity to study pulmonary biopsies from 46 patients with mitral stenosis and varying degrees of pulmonary hypertension. The correlation of structural alterations of the lung in mitral stenosis with the hemodynamic changes obtained through the right heart catheterization forms the basis of this report.

Earlier descriptions of pulmonary vascular changes in rheumatic valvular disease were derived from postmortem findings.[1] In these early reports the functional status of the patient was not adequately detailed and the pathological changes usually represented a terminal phase of advanced disease. More recent studies of the lung biopsy have elucidated the earlier changes in vascular pattern but the correlation between structure and function has not been satisfactory.[2–11] This presentation reviews our own data on the problem.

Material and Methods

At the time of mitral valvotomy, a wedge of pulmonary tissue from the expanded left upper lobe was obtained prior to surgical relief of the mitral stenosis. The lung tissue was sectioned and stained with conventional stains of hematoxylin and eosin, Masson's trichrome, French-Weigert's elastic with tartrazine as a modified silver impregnation for demonstration of reticulin and periodic acid-Schiff (P.A.S.) reaction. The P.A.S. technic[12] was adopted because of its help in demonstrating the septal framework of lung tissue. In the course of the investigation it was found that Alcian blue and chlorantine fast red (a histochemical stain for the demonstration of acid mucopolysaccharides) were equally as effective as the P.A.S. reaction.

Measurements were made of the arterioles and small arteries within the lung parenchyma, following the method described by Kernohan *et al.*[13] The diameter of the vessels measured ranged from 50μ to approximately 250μ. Capillary turnings and vessels cut obliquely were not measured. No distinction on morphological grounds was made between bronchial and pulmonary arteries, but the presence of bronchial arteries in the biopsied edge of the left upper lobe is highly improbable. Miller has shown that the bronchial artery terminates at the respiratory bronchiole.[14] As no cartilage was observed in the biopsy specimens, it is probable that all vessels with a calibre greater than 50μ belonged to the pulmonary arterial system. However, any large vessel apposed to the bronchiole was not included in the study.

In each lung section at least six pulmonary vessels were studied to determine the ratio between thickness of vessel wall and size of the lumen. Only the intima and media were included in measuring thickness of vessel walls. This figure represented an average of four determinations, while the lumen was measured at two points. For controls, comparable measurements were made on specimens from 20 cases of sudden death with no evidence of pulmonary disease.* In both series the same technique of fixation and preparation was employed so that shrinkage in handling would be the same for the two series. The normal lumen to wall ratio is 4.5 to 9, with a decrease in any obliterative disease of the vessels.

Microscopic sections of the excised auricular appendage were studied for the presence of Aschoff bodies.

Right heart catheterizations were carried out by venous cutdown and these studies were repeated at six months in 23 cases and at 18 months in four cases, postoperatively.

For convenience the patients were divided into four groups according to their pulmonary artery pressure and functional status. Group 1 had normal pulmonary pressures at rest and exercise. Group 2 had resting pulmonary systolic pressure below 40 mm. Hg, but showed a prompt rise with mild exercise. Group 3 had marked pulmonary pressure elevation and a cardiac output which did increase with exercise. Group 4 had marked pulmonary pressure elevation and a cardiac output which did not increase with exercise.

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* Secured through the courtesy of the Coroner's pathologist of the City of St. Louis.

Morphological Alterations

The general pattern varies from minimal changes in the capillaries of the alveolar septa to advanced mural thickening and obliteration of the lumen in larger vascular channels (Table 1). In a few instances the alveolar septal walls were free of pathologic change and indistinguishable from the controls. The dilatation and congestion of alveoli were often associated with thickening and wrinkling of the reticulin membrane as demonstrated by Alcian blue and P.A.S. technique. The increase in the interstitial connective tissue and accumulation of collagen, revealed by Masson's trichrome stain was always associated with wrinkling and stiffening of the P.A.S. positive tissues. Capillary obliteration was sometimes observed. More advanced changes were encountered in the pulmonary arterioles. Fibrous and intimal thickening and medial muscular hypertrophy were the common structural changes associated with a narrowing of the lumen. In such instances the lumen to wall ratio was decreased.

In larger vessels a fibrous intimal thickening was encountered, usually uniform, but occasionally showing subintimal vacuolation or irregularly elevated proliferation. The intimal proliferation seemed due to young connective cells. In only three instances was a dense fibrinoid appearance noted.

Of the elastic membranes in the medium and larger sized vessels, the internal elastica showed fragmentation and duplication most frequently. The commonest alteration of the external elastic lamina was thickening and wrinkling.

In two instances, aneurysmal bulging of the vessels was noted, with fragmentation and disorganization of the media and dense sclerosis of the overlying adventitia. Several minute endothelial lined channels coursed in this eccentrically situated tissue. No erythrocytes were noted within these vessels. In the biopsy of one patient an eccentric thickening of several large vessels was noted with a related fibroblastic proliferation within the lumen and media. An infiltration of eosinophilic granulocytes and mononuclears was noted with the greatest concentration at the site of the granulomatous response. No fibrinoid necrosis of the media was observed, but the eccentric pattern of healing and partial erasure of the media were suggestive of a healed periarteritis nodosa.

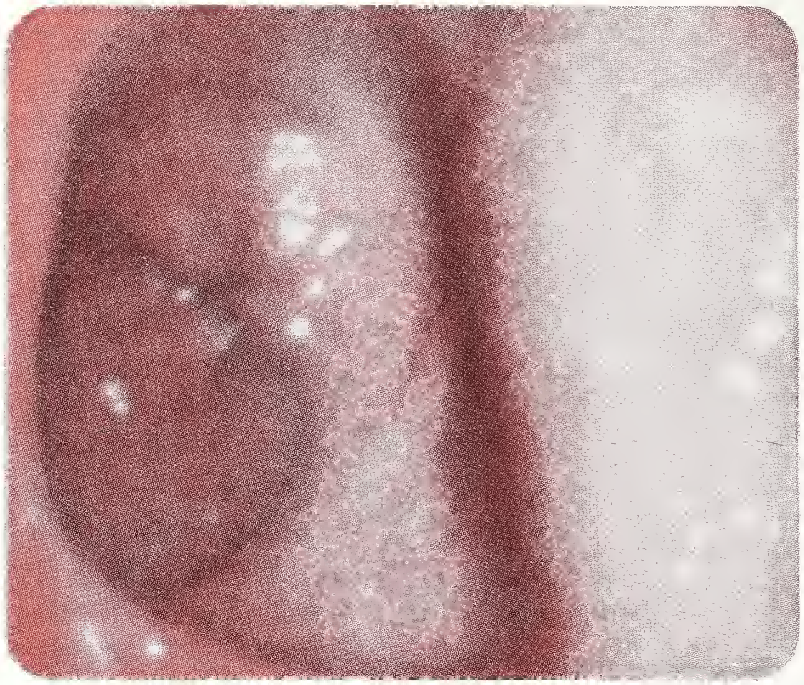
A report of findings in a study of pulmonary biopsies from 46 patients undergoing valvotomies for symptomatic mitral stenosis. Histologic abnormalities of the pulmonary vessels were found in all stages of the disease, and there appears to be a direct relation between increasing degrees of pulmonary hypertension and the severity of changes in the pulmonary blood vessels. Active rheumatic granulomas in the auricular appendage were found more frequently in patients with mildly elevated pulmonary pressure. Doctors Mudd and Wyatt are from the Departments of Medicine and Pathology, St. Louis University School of Medicine.

Attention was directed to the amount and distribution of stainable iron within the lung parenchyma. Iron pigment was found within the alveolar spaces; in a few instances these accumulations were traced back to buds of swollen septal cells. Lendrum has contended that a punctate disposition of hemosiderin is a characteristic finding in the lungs of autopsied cases of mitral stenosis.[15, 16] In this series, a punctate distribution was not a noteworthy feature. Siderotic granulomas, described in autopsied cases of mitral stenosis, were not encountered in any lung samples in this series.

In the present investigation, the morphological criteria of the Aschoff body, originally established by Aschoff,[17] Gross[18] and Klinge[19] have been followed. The frequent location of the characteristic granuloma in the subepicardial situation supports the view expressed by other investigators that the Aschoff cells and body are a response on the part of cardiac connective tissue and not of the muscle syncytium.[20-28] As has been previously reported,[29] the finding of Aschoff bodies in the auricular appendage offers just as sound a morphological substantiation for the existence, past or present, of rheumatic fever as does a similar finding in the ventricular muscle at necropsy. However, the relation of an Aschoff body to the present status of rheumatic activity is indeterminate.

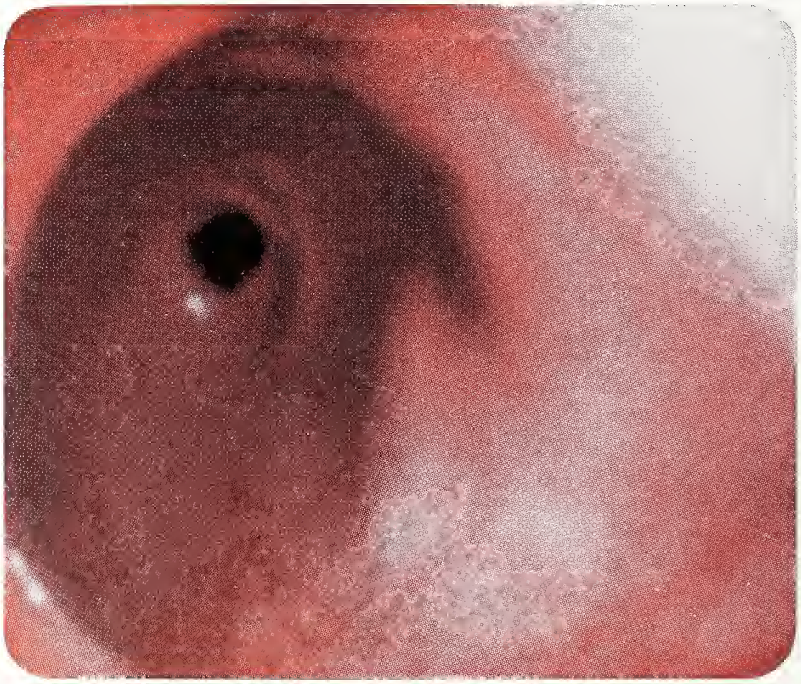
More active rheumatic granulomas were seen

Intragastric photography studies[1]



A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.



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Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg.

1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine

in the auricular appendage of Group 2 patients. Of 30 auricular samples, 11 were interpreted as showing active rheumatic granulomas, indicated by "owl-eye" histocytes with basophilic cytoplasm. These cells assumed a fan shaped pattern around a central core of necrotic tissue, and the P.A.S. staining reaction was positive. A comparable incident (30%) of active rheumatic granulomas has been reported by other investigators.

As the pulmonary pressure rises the average lumen/wall (L/W) ratio decreases, but not strikingly until Group 3 is encountered. Four cases were in the normal L/W ratio range (4.5-9). Several show great alterations and Case ♯ 3 had a 2.6 L/W ratio.

Other factors such as age of the individual do not appear to influence the development of vascular changes.

Comment

Although dilatation of capillaries has been repeatedly emphasized in previous interpretations of lung changes in mitral stenosis, thickening and wrinkling of the P.A.S. positive reticulin membranes appear to be superior morphological criteria. Thickening of the septal basement membranes is found in all three groups of patients and is more intense in Groups 3 and 4. Furthermore, narrowing of the vascular lumen of larger channels becomes increasingly pronounced with increase of pulmonary artery pressure. However, in some cases elevated pressures are found without visible alteration even in capillaries. This finding would support the premise that the vascular changes are the effect and not the cause of pulmonary hypertension.

The factors responsible for diminished lumen to wall ratios are: subintimal fibrosis, hypertrophic muscular changes, and thickening and duplication of the elastica. There is no suggestion of transition from one form of vascular thickening to another type of response. No single type of vascular thickening is associated with pulmonary hypertension to the exclusion of other forms. The adaptive responses of subintimal fibrosis, elastica alterations and muscle hypertrophy were found together or separately.

Hyalinization of the walls of smaller blood vessels is rarely seen. When this phenomenon is observed in vessels with L/W ratios of less than 3.0, it is not associated with intraluminal thrombosis.

Duquid has advanced the hypothesis that hyaline and fibrinoid alterations are due to mural deposition of plasmatic substance.[30] Some authors have related subintimal fibrous thickening to intraluminal thrombosis but in the lesions observed here we could not demonstrate incarcerated thrombotic occlusions nor suggest a definite cause. Ischemia and long term pulmonary hypertension are probably factors of little importance.

The finding of the greatest incidence of active rheumatic granulomas in Group 2 patients, although resting upon a limited number of cases, is of interest. It would appear that these patients with pulmonary systolic pressures below 40 mm. Hg which rise promptly with exercise have early or limited vascular changes within the lung. This same group of patients, from a temporal analysis of the morphological evidence, appear to be closest to the beginnings of rheumatic fever.

The frequency of rheumatic granulomas is at variance with the clinical assessment. At time of operation no evidence of active rheumatic fever was uncovered and yet the incidence of active rheumatic granulomas in the myocardium was quite high. Previously reported statistics on the frequency of acute rheumatic granulomas have been similar. Both of these observations are of interest in the consideration of the natural history of rheumatic fever. Because of its biological background of altered mesenchymal reactivity, the destructive effects of rheumatic fever progress in visceral tissues without concomitant clinical reflections.

Pulmonary artery pressure studies carried out six to eighteen months after surgical relief of the stenosis of the mitral valve indicated an amelioration of pulmonary hypertension in 32 cases. Marked adaptive alterations such as subintimal fibrosis and mural hyalinization and elastic break up would appear, at least on morphologic grounds, to be indelible markings of injury.

Summary

Biopsy of the lung has been performed in 46 patients undergoing valvotomy for symptomatic mitral stenosis. At all stages of the disease one may demonstrate histologic abnormalities of the pulmonary vessels. Even in patients with normal to slightly elevated pulmonary pressure at rest, one can encounter rather severe vascular changes. Moreover, in certain cases with advanced pulmonary hypertension, only minimal objective change in the pulmonary vessels is demonstrated.

Nonetheless, when one classifies patients into groups according to the degree of pulmonary hypertension, there is on the average a direct

TABLE 1

HEMODYNAMIC AND MICROSCOPIC DATA FROM 46 CASES OF MITRAL STENOSIS

Case and Age	*Lumen to Wall Ratio (Normal 4.5-9.0)*	*Microscopic Pulmonary Vascular Changes*	*Pulmonary Artery Pressure mm. Hg*			*Total Pulmonary Resistance dynes/sec/cm. -5 (Normal 300 or Less)*			*Auricular Biopsy for Aschoff Bodies*
			BEFORE VALVOTOMY	6 MONTHS AFTER	12 MONTHS AFTER	BEFORE VALVOTOMY	6 MONTHS AFTER	12 MONTHS AFTER	
			Group II						
1, 28	3.3	mild cap.	35/21	36/21		374	290		positive
2, 41	4.4	mod. cap. mild ao	30/18	50/34		260	610		negative
3, 41	2.6	mild cap.	22/11	24/14		340			negative
4, 26	8.9	mild cap.	38/20			730			negative
5, 24	5.5	mild cap.	39/25			660			positive
6, 34	5.1	sev. cap. mild ao.	30/15	44/19		314	348		positive
7, 39	4.1	mild cap.	37/18			522			positive
8, 31	4.3	mild cap. mild ao.	33/20			522			positive
9, 43	6.0	mild cap.	33/22			348			positive
			Group III						
10, 39	3.7	mild cap. mod. ao. mild art.	46/24						negative
11, 38	4.4	normal	70/20	59/28	48/30	992	876	129	positive
12, 33	2.8	sev. cap. mod. ao.	[*]						
13, 29	3.8	sev. cap.	103/36	42/27		860	260		
14, 46	3.1	mild ao.	103/57	37/14		300	458		
15, 37	4.1	mild cap.	64/21	52/20		830	530		negative
16, 31	4.2	mod. cap.	96/39			1,730			positive
17, 32	6.3	mod. cap.	66/22	35/18		950	388		negative
18, 41	4.6	mild cap.	40/17	38/25	53/26	460	500		negative
19, 48	1-6	mod. cap. mod. ao.	68/30			1,635			
20, 30	2.8	mod. cap. mod. ao. mod. art.	42/31			620			negative
21, 38	5.5	mod. cap. mild ao.	[*]						
22, 48	5.9	normal	45/24	38/24		822	632		
23, 36	5.3	sev. cap. mod. ao. mod. art.	67/28	54/24		620	732		negative
24, 29	2.1	sev. cap. sev. ao. sev. art.							
25, 30	7.3	normal	41/21	33/17		288	327		
26, 24	8.8	normal	51/30	38/20		530	543		
27, 37	4.4	mild cap.	42/21	36/16		224	312		

[*] These patients, although not having a preoperative catheterization, did have pulmonary pressures recorded while on the operating table. Because of anesthesia and an open chest the figures were therefore lower than what would have pertained at ambient air and awake. They were, therefore, placed in their representative group without a specific pressure being assigned.

cap. = pulmonary capillary, ao. = pulmonary arteriole, art. = pulmonary artery, sev. = severe, mod. = moderate.

TABLE 1—*Continued*

Case and Age	*Lumen to Wall Ratio (Normal 4.5-9.0)*	*Microscopic Pulmonary Vascular Changes*	*Pulmonary Artery Pressure mm. Hg*			*Total Pulmonary Resistance dynes/ sec/cm. –5 (Normal 300 or Less)*			*Auricular Biopsy for Aschoff Bodies*
			BEFORE VALVOTOMY	6 MONTHS AFTER	12 MONTHS AFTER	BEFORE VALVOTOMY	6 MONTHS AFTER	12 MONTHS AFTER	
28, 42	5.6	mod. cap.	66/34	55/27		768	627		negative
29, 28	1.1	sev. cap. sev. ao. sev. art.	68/30	40/21		795			negative
30, 42	2.5	sev. cap. mod. ao. mod. art.	64/30			1,020			negative
31, 45	1.6	mod. cap. mod. ao. sev. art.	86/47			138			
32, 41	4.2	sev. cap. mild ao.	58/28	70/34		805	770		negative
33, 22	1.2	mod. cap. sev. ao. sev. art.	82/34			1,135			positive
34, 34	1.5	sev. cap. sev. ao. sev. art.	54/30			685			positive
35, 49	3.5	normal	*						negative
				Group IV					
36, 36	2.3	mod. cap. mod. ao. mod. art.	34/20	31/17		347	469		positive
37, 25	0.5	mod. cap. sev. ao. sev. art.	116/58	77/36	65/30	1,100	1,250	852	negative
38, 38	4.5	sev. cap. sev. ao. mild art.	95/41			1,215			
39, 31	4.2	mild cap.	*	66/30	68/36		1,000	830	negative
40, 58	2.4	mod. cap. mod. ao.	70/28			540			
41, 35	3.7	sev. cap. sev. ao. mod. art.	74/40	70/38		1,930	9.26		
42, 48	2.4	sev. cap. sev. ao. sev. art.	85/40			1,103			negative
43, 37	2.1	sev. cap. sev. ao. sev. art.	106/49			2,000			positive
44, 46	3.0	mod. cap. mod. ao. mod. art.	118/54			2,460			
45, 27	2.6	mod. cap. mod. ao.	92/38			135			negative
46, 38	1.7	mod. cap. mod. ao. sev. art.	*						

relation between increasing degree of pulmonary hypertension and severity of changes in the pulmonary blood vessels, as evaluated by lumen to wall ratio of the arterioles and small arteries.

Active rheumatic granulomas in the auricular appendage were found more frequently in patients with mildly elevated pulmonary pressure.

Acknowledgement: We are indebted to C. R. Hanlon, M.D., of The Department of Surgery for obtaining the lung and atrial biopsies at the time of mitral valvotomy.

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The Louisiana State Medical Society is soliciting contributions to a "Betsy Fund" to aid physicians whose offices and homes were totally destroyed by Hurricane Betsy. Dr. Charles B. Odom, president of the Society, said, "we already know of three members of our Society residing in areas below New Orleans who were completely wiped-out by the hurricane. The purpose of the Louisiana State Medical Society Betsy Fund is to assist these physicians in getting reestablished as quickly as possible." Flood losses, which caused the greatest damage to the offices and homes of these physicians, are not covered by insurance. The Medical Society has already made cash grants to some of the physician hurricane victims and will distribute all of the proceeds of the Betsy Fund as quickly as possible. All physicians are invited to contribute. Checks should be made to the Louisiana State Medical Society Betsy Fund, Room 1528, 1430 Tulane Ave., New Orleans, La. 70112.

RONALD M. TURNER, M.D., ***Independence***

Adenocarcinoma of the Kidney

Case Reports

Adenocarcinoma of the kidney is the most frequent malignant tumor of renal origin found in the adult. These tumors tend to be large, cellular, with a tendency to central necrosis and they usually appear to be well encapsulated. Their tendency to invade the renal parenchyma, including the renal pelvis and especially the renal veins, is well recognized. Pulmonary and bony metastases are frequent and may be the initial manifestation of the disease. Soft tissue metastases also occur and may be present without signs or symptoms referrable to the genitourinary tract.

This report is based on 53 cases of adenocarcinoma of the kidney seen at the Ellis Fischel State Cancer Hospital from 1941 to 1963. Three additional cases are mentioned only in passing, as they were unsuspected clinically but diagnosed at autopsy. (One of these cases is used as a case report.) It is interesting to note that the renal neoplasm in these three cases was not the direct cause of death.

The ages of these 53 patients ranged from 25 to 78 years, the mean being 63 years. There were 33 males and 20 females, a ratio of 1.65 to 1. This represents a much higher percentage of females than that reported in several larger series.[1]

In reviewing a series of 53 cases of adenocarcinoma of the kidney, the author concludes that the classic triad of gross hematuria, abdominal mass and pain cannot be relied upon for early diagnosis. Nevertheless, hematuria, either gross or microscopic, remains one of the best early symptoms. New diagnostic procedures and more radical excision should help increase survival rates. Doctor Turner was a Resident in Surgery at Ellis Fischel State Cancer Hospital when this paper was written. The investigation was supported by PHS Grant No. CA-08023 of the National Cancer Institute. The author now is in private practice and a member of the surgical staff of the Independence Sanitarium and Hospital.

In the present series the right kidney was involved in 25 patients and the left in 28. There was no case of bilateral primary involvement.

Twenty-eight patients (53%) had gross hematuria. Three patients had microscopic hematuria only, without a history of gross hematuria. Of the remaining 22 patients, 18 had no history or evidence of either gross or microscopic hematuria. In four patients this sign could not be determined.

Twenty-nine patients (55%) had a palpable abdominal mass on physical examination. In 18 patients no mass could be felt. In the remaining six patients no mention of this sign was made.

Pain referrable to the involved side was present in only six patients (11%). The complete designated "major triad" of gross hematuria, palpable abdominal mass and pain was present in only four patients or 7.5%.

Weight loss varying from 5 to 50 lbs. was present in 24 patients (45%). Ten patients had no weight change, and in 19 no mention of this sign was made.

Thirty-one patients (58.5%) had a temperature of 99 F. or higher on admission. The range was 99 to 102 F. with an average of 100 F. In many of these patients it was difficult to determine the source of the elevated temperature.

Three patients had a hemoglobin determination of greater than 16 gms. % and ten had a determination of less than 10 gms. %. One patient with a hemoglobin of greater than 16 gms. % was found to have a true polycythemia vera.

Sixteen patients (30%) had evidence of metastatic disease on admission to the hospital. In 11 patients (21%) metastases were the presenting clinical evidence of the disease.

Eighteen surgical specimens revealed evidence of vein invasion (56% of 32 patients). Fourteen specimens had no evidence of invasion, and in the remaining 21 the presence or absence of invasion could not be determined.

The size of these renal tumors varied from 3 to 28 cm. in diameter.

Urolithiasis was present in only one patient and involved the opposite kidney. One patient was followed for several months with X-ray evidence of a possible calcified renal cyst. She was finally explored because of persistent left lower quadrant abdominal pain and was found to have an adenocarcinoma of the left kidney with a calcified pseudocapsule.

Four patients had local recurrence in the operative incision. All of these recurrences were in lumbar incisions.

Thirteen patients received radiotherapy to the primary lesion and/or the areas of metastases. The response was generally poor.

The areas of metastatic involvement in this series included the bony pelvis, lumbar spine, lungs, liver, heart, femur, chest wall, skull, scalp, groin, buttock, opposite kidney, thigh soft tissue, thyroid and supraclavicular lymph nodes.

The operative mortality overall (death within 30 days of surgery) was 13.2%. There has been only one operative death since 1950 (3.2%). (Fig. 1 presents a graphic summary of the above facts and findings.)

SURVIVAL

Fig. 2 shows the cumulative survival for this series as of December 31, 1963. The five and ten year cumulative survival rate was 28.3% and 17.0% respectively.

In those patients treated prior to 1958 (44) the absolute five year survival was 12 patients or 27%. Four of these patients survived ten years or more and are without evidence of cancer at this time.

Fig. 2 also compares the cumulative survival rate with the normal expected survival of residents of the State of Missouri at age 63 (the median age of our patients with carcinoma of the kidney). The rates tend to parallel one another after the third year. This observation confirms the impression that cancers not controlled by primary therapy will generally cause the death of the host within three years.

Fig. 3 compares the survival rate according to the presence or absence of vein invasion and according to the presence or absence of a palpable abdominal mass on the initial physical examination. The rate of survival is essentially the same when patients having vein invasion, a palpable abdominal mass or no palpable abdominal mass are compared. The absence of vein invasion, when compared to the above three factors, reveals a better survival rate.

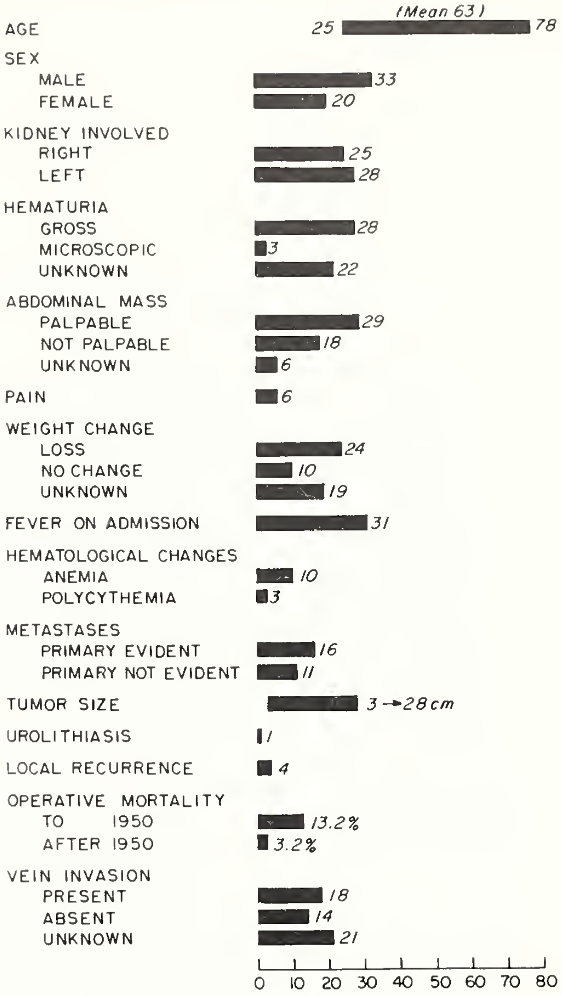

Fig. 1

CASE REPORTS

The following case reports demonstrate some of the clinical characteristics and end results of patients suffering from adenocarcinoma of the kidney.

Case ♯ 1: A 75-year-old woman saw her physician after experiencing pain in her left hip for six months. An X-ray film of the pelvis revealed an osteolytic lesion of the left acetabulum which, on biopsy, was reported to be an angiosarcoma. She was treated by deep irradiation and subsequently developed a chronically draining sinus tract at the biopsy site. She was re-hospitalized for debridement of her sinus tract and on review of the initial pathology specimen a diagnosis of "benign hemangioma" was made. The patient deteriorated rapidly and expired with clinical evidence of pneumonia and cardiac decompen-

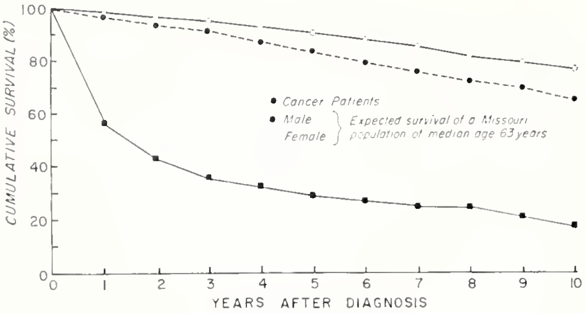

Fig. 2

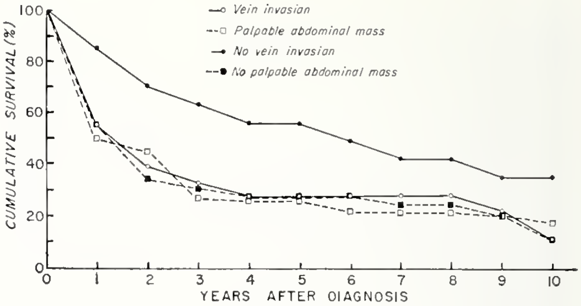

Fig. 3

sation. At autopsy, a 7 cm. in diameter adenocarcinoma of the right kidney with vein invasion was found. Metastases were present in the lungs (0.1 to 0.5 cm. in diameter), left ventricle, hilar lymph nodes, liver and left acetabulum.

Case ♯ 2: A 51-year-old man entered the hospital because of a rapidly enlarging, painless mass in the left occipital scalp. Biopsy revealed undifferentiated carcinoma; and diagnostic X-rays revealed hilar adenopathy, osteolytic changes in the left occipital skull and a left renal mass. This patient was treated with radiotherapy without significant regression in the size of the skull metastasis.

Case ♯ 3: A 54-year-old white female was seen for evaluation of a palpable right upper quadrant mass of six month's duration associated with episodes of gross hematuria. Cystoscopy revealed blood issuing from the right ureteral orifice. Intravenous pyelograms were interpreted as showing an intrarenal tumor. The chest film did not reveal any abnormalities. At operation, an adenocarcinoma of the right kidney was found which had invaded a portion of the inferior vena cava. Resection of the tumor and involved inferior vena cava was carried out. The patient is alive, well, and without evidence of disease more than ten years after surgery.

DISCUSSION

These data would indicate that adenocarcinoma of the kidney is a highly lethal disease. Since only 7.5% of patients present with the designated classical triad of signs and symptoms, early diagnosis is sometimes difficult.

Prognostically speaking, those tumors classified as having "clear" cytoplasm (in distinction to "granular") were found to have a better prognosis by Bottiger and Ivemark.[2] Fever was found by these workers to be correlated with an increase in the erythrocyte sedimentation rate and the presence of an increase in the alpha-2-globulin and fibrinogen in the plasma. A fever does not worsen the prognosis.[2, 3]

The tendency of renal carcinoma to metastasize rather early was commented upon by Chute, *et al.*,[4] who found that one-third of their cases had metastases by the time the primary was found. Many pulmonary metastases appear to be solitary and some have advocated lobectomy for these lesions.[5]

In the series of 102 cases by Royce and Tormey,[6] radiotherapy had very little beneficial effect. This present series would indicate this to be true.

Vein invasion has been correlated with a serious prognostic significance.[7] While this appears to be true, it does not mean the situation is hopeless.

The problem of local recurrence is apparently not great and appears to be correlated more with inadequate removal rather than spillage.[6]

Diagnostically, nephrotomography has been used to help differentiate between benign cysts and neoplasm.[8] Chynn and Evans[9] have found 95% accuracy for this method in differentiating cyst from neoplasm and 94% accuracy in differentiating neoplasm from cyst. The differential points are as follows:

(1) Renal cyst: The arterial phase shows avascularization of the space-taking area. The nephrotomograms show one or several round or ovoid sharply defined radiolucent areas, well-marginated from the surrounding normal, functioning opacified parenchyma.

(2) Renal carcinoma: The arterial phase shows irregular small vessels or "puddling" shown in the space-occupying area which is pathognomonic. In addition, the mass may show equal or greater density in comparison with surrounding normal tissue. Necrosis (so common in renal carcinoma) will produce blotchy, irregular, poorly defined areas of radiolucency. These contrast with the sharply marginated lucent defects produced by cysts.

In the present series, 35 patients had either intravenous or retrograde pyelography or both. In 16 cases (46%) both studies were collectively interpreted as showing intrarenal neoplasm. In five patients retrograde studies were needed to clarify the intravenous findings. In two, the intravenous studies were thought to be normal, but the retrograde findings were indicative of neoplasm. In two intravenous studies, renal cysts were thought to be present. In one of these a retrograde study revealed changes interpreted as being due to neoplasm. In one case both intravenous and retrograde studies were interpreted as a renal cyst. One intravenous study was read as normal and in another both studies were thought to be normal. In two, both studies were read as showing polycystic disease and in one the intravenous study was read as a calcified renal cyst. We have not used percutaneous biopsy to differentiate between cyst and tumor. Laminography has been of some additional help. Aortograms have not been used thus far.[10]

Improved survival from adenocarcinoma of the kidney must, at the present, depend on earlier diagnosis and more radical excision of the primary when distant metastases are not clinically evident.[1, 11, 12] Any adult with the history of hematuria, gross or microscopic, must be completely evaluated. In addition to excretory and/or retrograde pyelograms, nephrotomography and arteriography are proving to be useful diagnostic aids.

More radical excision has recently been shown to improve the survival significantly.[1] This type of excision is done through a thoracoabdominal incision, with early ligation of the pedicle to minimize the possibility of spreading tumor cells through the veins, followed by en bloc removal of the kidney, surrounding fascia, fat, and lymphatic drainage from the diaphragm to the bifurcation of the aorta. We have recently begun using this type of approach and, while the follow-up is not presently adequate, the surgery is greatly facilitated by the adequate exposure and the mortality and morbidity are not significantly raised.

For those patients who are found to have vein invasion without evidence of distant metastases, no valid conclusions as to additional therapy can be made from this series, except to excise the involved veins, including areas of the inferior vena cava, if necessary. It is interesting to note that of the four patients treated prior to 1958 who survived ten years or more, two had vein invasion and one of these had a partial resection of the inferior vena cava because of tumor invasion.

SUMMARY

A series of 53 cases of adenocarcinoma of the kidney is presented. The classic triad of gross hematuria, abdominal mass and pain cannot be relied upon for early diagnosis. The best early symptom appears to be hematuria, either gross or microscopic. Weight loss is a common clinical finding. A palpable abdominal mass is frequently present and may represent advanced disease. Approximately one-third of the patients have metastases by the time they are seen, and in one out of five the metastases are the presenting evidence of the disease. Vein invasion does not necessarily mean a hopeless prognosis, especially if there is no evidence of distant metastases and the involved veins can be removed with the specimen. The suggestion is made that an increased five year survival can be expected from the use of radical en bloc excision of the kidney, tumor, fascia (Gerota's), surrounding fat and lymphatic drainage area through an adequate thoracoabdominal incision.

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Paul R. Whitener, M.D.

President's Message

In previous communications, I have called for more time and more effort on the part of more physicians in medical society activities. Each month it becomes more important that many voices speak for organized medicine, and that they speak from unified thought and in support of unified action.

This purpose can be accomplished by working through existing channels within the local medical society, the councilor district, the state association and the AMA. The elected officers of organized medicine at all levels want to know what the "grass roots" physician is thinking and what his wishes are. Only when these officers have such information can they truly reflect the philosophy of those whom they represent.

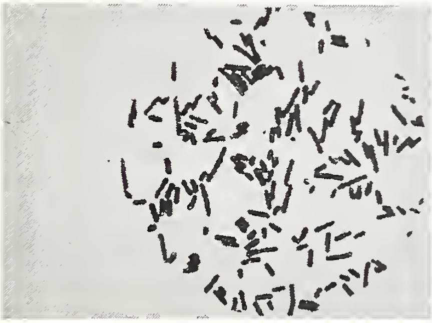
Quoting from Dr. E. H. Stratemeier, editor of the *Greater Kansas City Medical Bulletin,* "Just as AMA can't function rapidly and intelligently with a meeting twice a year, neither can we here."

There must be continuing communication all along the line to make rapid and intelligent action possible. As a practicing physician, serving his time as president of the State Medical Association, I do not feel that I have the training and background experience necessary to cope with all of the ever-increasing complexities of legislative-legal-socio-economic medicine. I suspect that other officers of your local, state and national organizations have similar feelings about their own capabilities.

We need the *informed* opinion, the *objective* thinking and the *active* assistance of every physician. Only with such assistance can we make the decisions which medicine must make in this day and age.

Paul R. Whitener M.D.

positive thinking about gram-negatives



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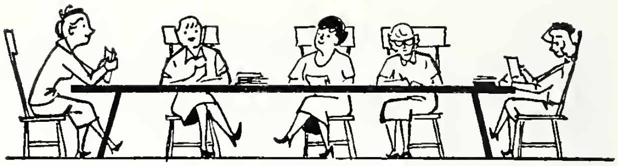
Woman's Auxiliary



"God Rest Ye, Merry Gentlemen"—and ladies, and anyone else who perchance may take the time to read this little article as the busy holiday season approaches. Although, how it can be any busier than the past 15 months is more than I can fathom!

Mrs. R. W. Bohnsack

October found me winging my way to Chicago for the National Fall Conference and North Central Regional Workshop. Wilda Stacey, President-Elect; Mary Mantz, Parliamentarian; Florence Guhleman, Mental Health Chairman; Anna Whitman, AMA-ERF Chairman; and Jane Stewart, First Vice President and Chairman of Membership and Organization also attended. Our own Betty Sutter presided as National President and posed two questions which set the theme: (1) What are the basic areas of concern of our cities, counties and states? and (2) How can the Auxiliary create awareness of these problems and motivation towards solving them?

Inspiring talks by Dr. F. J. L. Blasingame, AMA Executive Vice President; Dr. Frederick Swartz, Chairman of AMA's Committee on Aging; Dr. James Z. Appel, AMA President; Dr. Fred Hein, Chairman of the AMA Department of Community Health and Health Education, and others attempted to answer these questions. Doctor Hein was especially inspiring when he emphasized that the most important aspect of a school health program is health education and pointed out that the health misconceptions of school children are usually retained over the years. To provide the proper information, he suggested that Auxiliary members contact local school officials informing them of the availability of AMA's *Health Education Service for Schools and Colleges,* a monthly bulletin of authentic health information.

I had scarcely returned from Chicago when it was time for our own Fall Conference—our HOOTENANNY FOR HEALTH—at Poplar Bluff. The Butler-Ripley-Wayne Auxiliary members, assisted by others of the Ninth and Tenth Districts, deserve a high note of praise for the beautiful job they did in planning and hostessing our meeting. We were pleased to have six representatives of our National Auxiliary as our guests: Mrs. Willard Scrivner, East St. Louis, Illinois, North Central Regional Vice President, who spoke on "The Image of the Doctor's Wife"; Mrs. Wendell Roller of Monmouth, Illinois, our Regional AMA-ERF Chairman, who entered whole-heartedly into our HOOTENANNY; Mrs. Howard Liljestrand of Honolulu, Hawaii, our National Treasurer, who came just because she wanted to; Mrs. Jordan Kelling of Waverly, our National Disaster Preparedness Chairman who, along with Mrs. Henry Bauman of Maryville, our Regional Chairman on Disaster Preparedness and Mrs. Hugh Brady of Concordia, our state Chairman, presented a clever song and skit on Medical Self-Help, complete with Resusci-Anne!; and Mrs. Stanley S. Peterson, Springfield, who is serving on the National Nominating Committee. Representatives of the MSMA were Dr. Paul R. Whitener, President, who spoke at our Wednesday night dinner, and Dr. Henry V. Guhleman, Jr., Chairman on Mental Health, who spoke at our Thursday morning meeting. We were pleased to have so many doctors attending our dinner. Pictures of our HOOTENANNY FOR HEALTH were taken for the *Poplar Bluff Daily American Republic,* the *New York Medical Tribune,* and the *MD's Wife.* All of us came home with a feeling of satisfaction and inspiration for the year ahead.

The convention of the Auxiliary to the Southern Medical Association, November 1-4, in Houston with Ruth Kelling, President, presiding, found Missouri well-represented.

And now I must take time-out for family, friends, church and Christmas music, with carolling for our Senior Citizens and hospital patients and a beautiful candle-light Christmas Vespers. I hope that our voices will join with others the world over in singing, "LET THERE BE PEACE ON EARTH—AND LET IT BEGIN WITH *ME!*" May the blessings of this Christmas season be yours all the year long!

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EDITORIALS

LET NOTHING YOU DISMAY

. . . how does one describe the Christmas season in a hospital?

How do you put on paper the emotional experience, the little pleasantries, the human tragedy and the profound sense of compassion that only a hospital can know during the holiday season? How do you put loneliness into words?

The hospital is a sad place at Christmas, but it has its joys as well. Most of the patients who were able to leave have gone to their homes. Only those most seriously ill or disabled remain . . . and those to whom home is just a dream, a memory or a hope.

In pediatrics there is brightness and cheer, and the youngsters are proving that Christmas really is for children, no matter what. And someone invariably shows up in a Santa Claus suit in case any doubt remains.

And maternity is a happy place, too, for what could be more delightful and more hopeful for the future than a baby, born, like another infant twenty centuries ago, at Christmas time?

And what could be more tragic, more shattering, more soul searing that the loss of a loved one on Christmas Eve?

The hospital sees all of those things and feels all of these emotions.

And after the visitors are gone and the carolers have departed and the hospital is left once again to the patients and to the nurses, and the maids and porters and maintenance men and technicians and doctors, who have given up so much of themselves to work as one in a common purpose, an odd sort of quiet settles over the hospital.

Perhaps through the silence comes the muffled sob of some child who is spending his first Christmas away from home; or in a ward a patient stirs fitfully and wonders what it would be like to have just one visitor and perhaps dreams of other days when there was someone who cared. And perhaps even the patient who had a happy time will awaken in the morning with the trace of tears on the pillow case.

Truly, the holiday season is the epitome of the concept underlying medical and hospital care . . . the great humanitarian spirit, the selflessness, the tenderness of thought and action, the annual renewal of man's belief in goodness and brotherhood and in doing unto others. And those who work in the hospitals can take solace in the knowledge that they are living the Christmas spirit, not just at Christmas time, but all the time. What nobler goal can man aspire to?

C. G. STAUFFACHER, M.D.
Editor, Pettis County Medical Society Bulletin
December 1964

THE NEVER ENDING PROCESS

Most physicians continue to study medicine long after entering practice, and the number of postgraduate medical courses available to them has increased nearly 50% in the past five years. This year 1,641 courses are being offered in 40 states and the District of Columbia, according to the November 15 issue of JAMA, *The Journal of the American Medical Association.* The number of physicians registered in these courses may be more than 150,000.

Attending postgraduate courses, however, is only one of the ways a doctor continues his education, says the *Journal.* Most physicians rank their continued reading of medical literature as one of their most important sources of new knowledge.

They also continue their education through professional contacts with other physicians and through hospital staff meetings and national, state and local medical society meetings. Formal postgraduate courses, however, are becoming increasingly important and popular, and medical schools are the major sponsors of this activity. During the 1964-65 academic year, there were 88,845 registrations at courses sponsored by the schools.

The most popular subject when doctors return to the classroom? Psychiatry, by a wide margin!

WHY THAT NUMBER . . .

Retiring people just because they live to be 65 years old is like killing a race horse because he won a race. Very few of us less than 65 years old are as experienced in our field as those who are past 65 and working in our art, profession, industry or business. All of us have already lost a lot simply because someone in an ill considered moment "selected" 65 as an age for ending rather than an age for commencement.

The world is much the greater because five men lived and worked beyond the present unrealistic age of retirement—65—Herbert Hoover—Bernard Baruch—Albert Schweitzer—Douglas McArthur—Winston Churchill. The world is the greater for the work being done (since they were 65) by J. C. Penney, Will Durant, Harry Truman and Ike Eisenhower. The forced retirement of any one just because a numerical age has been reached is unfair and diabolical. It comes as a result of someone (years ago) making a decision based on past inexperience, not future realism—on past error, not future fact.

Now our average life expectancy is much longer than it was just a few years ago. What are we supposed to do with the trained mind and muscle that is forced into retirement at 65 for the remaining years of that individual's life? Are those past 65 to become a herd of vegetables just to make room for someone less than 65? What kind of logic pervades the minds of those who put out to pasture some of the best informed and most active minds in the United States just because we have erroneously agreed that the quitting time whistle blows at 65?

Professional men and those who own their own business are not forced to retire by this capricious, ambiguous rule, and glad we should be that they are not. Do you want your doctor, lawyer or minister to walk off the job just because he has reached 65?

The whole system of forced retirement needs a thorough overhauling—it is not in step with the times. It is not realistic. The present system of forced retirement at 65 is as much a blot on our civilization as was forced child labor in British factories (less than two centuries ago) was a blot on their civilization.

We learn slow. We make progress only as we are forced to make change. One change is now certainly mandatory: a realistic retirement age geared to modern health standards, life expectancy, mental alertness and personal productivity. Retirement age not based on those factors is as ridiculous as destroying the Ten Commandments simply because they are older than the telephone book.

St. Louis County Medical Society
Bulletin
October 22, 1965

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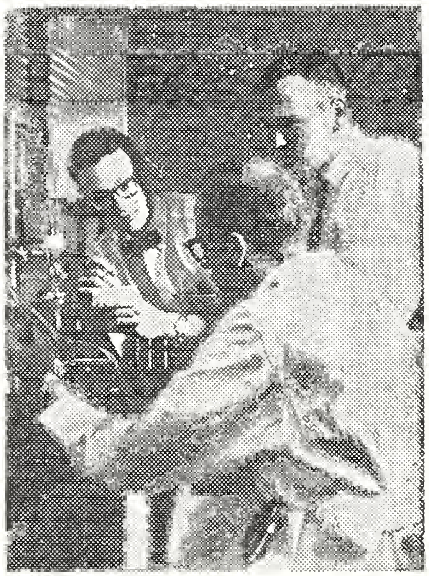

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New Members

John T. Brockley, M.D., 3901 Germania St., St. Louis, has become a member of St. Louis Medical Society. Dr. Brockley is a native of Helena, Montana, received his preliminary education at Carroll College and his M.D. degree at Creighton University in 1961. He specializes in Radiology.

William H. Danforth, M.D., Barnes Hospital Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Danforth is a native of St. Louis, received his preliminary education at Princeton University and his M.D. degree at Harvard University in 1951. He specializes in internal medicine.

Richard K. Danis, M.D., 634 N. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Danis is a native of St. Louis, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1957. He specializes in pediatric surgery.

James M. Flynn, M.D., Meyer & Prospect, Kansas City, has become a member of Jackson County Medical Society. Dr. Flynn is a native of Omaha, Nebraska, received his preliminary education at State University of Iowa and his M.D. degree at State University of Iowa in 1956. He specializes in pathology.

Milton T. Fujita, M.D., 1221 S. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Fujita is a native of Gonzales, California, received his preliminary education at Gonzales University and his M.D. degree at St. Louis University in 1960. He specializes in pediatrics and psychiatry.

Phillip J. Goldstein, M.D., 18 S. Kingshighway, St. Louis, has become a member of St. Louis Medical Society. Dr. Goldstein is a native of Toledo, Ohio, received his preliminary education at Washington University and his M.D. degree at St. Louis University in 1960. He specializes in obstetrics and gynecology.

Mark J. Halloran, M.D., 52 Maryland Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Halloran is a native of Jackson, Minnesota, received his preliminary education at St. Thomas College and his M.D. degree at Marquette Medical School in 1959. He specializes in internal medicine.

R. R. Knowles, M.D., 5400 Arsenal St., St. Louis, has become a member of St. Louis Medical Society. Dr. Knowles is a native of Sydney, Australia, received his M.D. degree at the University of Sydney in 1947. He specializes in psychiatry.

(Continued on page 1018)

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Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
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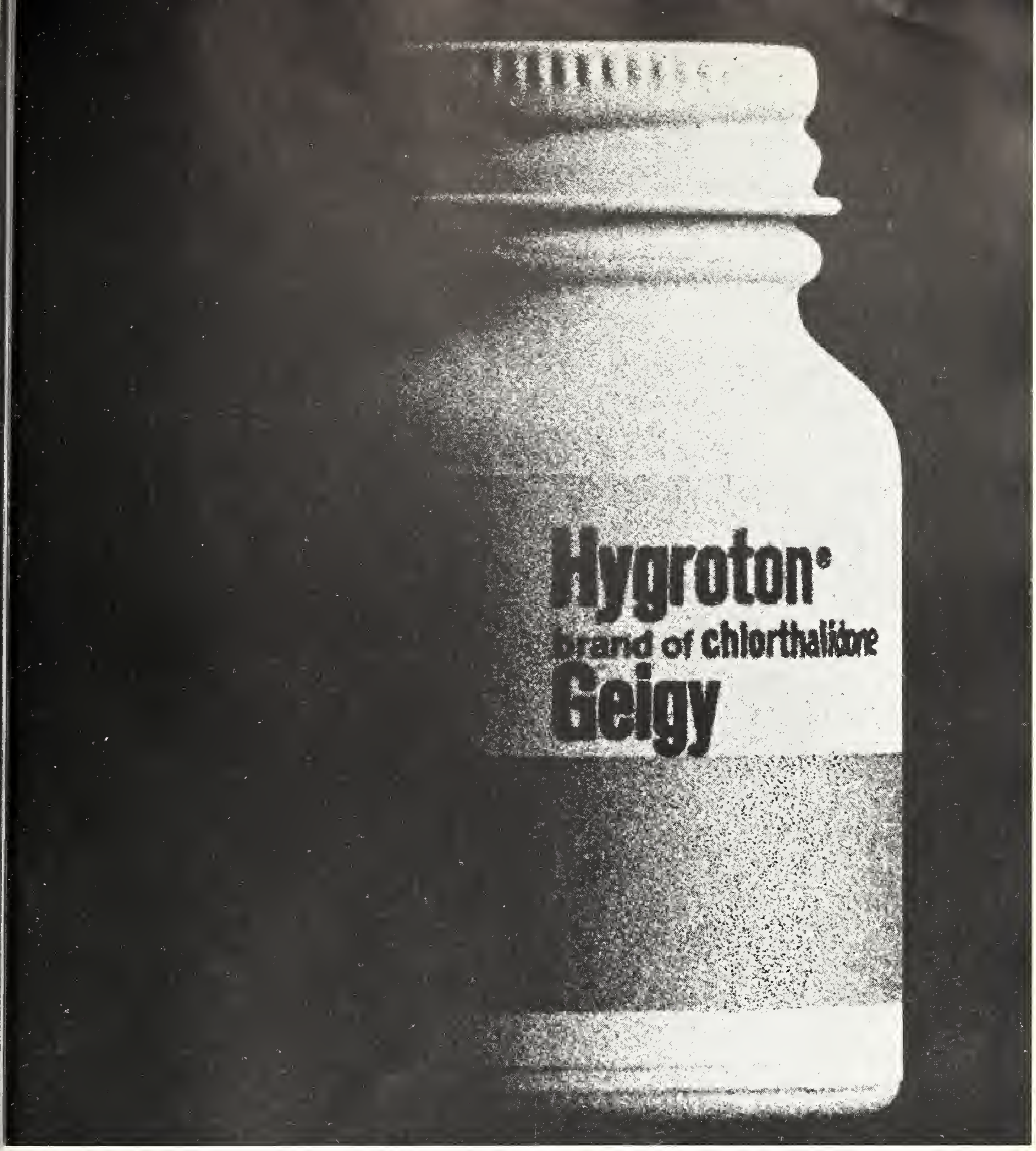

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And those who can afford the best.

New Members (con't.)

Nobuko O. Kuhn, M.D., 216 S. Kingshighway, St. Louis, has become a member of St. Louis Medical Society. Dr. Kuhn is a native of Maui, Hawaii, received her preliminary education at the University of Hawaii and her M.D. degree at Washington University in 1959.

France A. Laux, M.D., 615 S. New Ballas Rd., St. Louis, has become a member of St. Louis Medical Society. Dr. Laux is a native of Granite City, Illinois, received his preliminary education at St. Louis University and his M.D. degree at St. Louis University in 1954. He specializes in pathology.

Thomas P. Meirink, M.D., 1402 S. Grand Blvd., St. Louis, has become a member of St. Louis Medical Society. Dr. Meirink is a native of St. Louis, received his preliminary education at Notre Dame University and his M.D. degree at Stritch School of Medicine of Loyola University in 1962. He specializes in orthopedics.

Adolfo E. Rizzo, M.D., 5400 Arsenal St., St. Louis, has become a member of St. Louis Medical Society. Dr. Rizzo is a native of Mar Del Plata, Argentina, received his M.D. degree at Buenos Aires Medical School in 1955. He specializes in child psychiatry.

Miekey L. Salmon, M.D., Barnes Hospital Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Salmon is a native of Henryetta, Oklahoma, received his preliminary education at Centenary College of Louisiana and his M.D. degree at Louisiana State University in 1959. He specializes in ophthalmology.

W. T. Snodgrass, M.D., Barnes Hospital Plaza, St. Louis, has become a member of St. Louis Medical Society. Dr. Snodgrass is a native of Childress, Texas, received his preliminary education at the University of Texas and his M.D. degree at the University of Texas in 1955. He specializes in urology.

Clifford R. Talbert, Jr., M.D., 1902 Broadway, Cape Girardeau, has become a member of Cape Girardeau County Medical Society. Dr. Talbert is a native of Kennett, Missouri, received his preliminary education at the University of Missouri and his M.D. degree at Washington University in 1959. He specializes in internal medicine.

Cesar A. Valtiera, M.D., 6376 Clayton Rd., St. Louis, has become a member of St. Louis Medical Society. Dr. Valtiera is a native of Monterrey, Mexico, received his preliminary education at the University of Nuevo Leon and his M.D. degree at the University of Nuevo Leon in 1951. He specializes in psychiatry.

Stanley G. Wilson, Jr., M.D., 1501 Locust St., St. Louis, has become a member of St. Louis Medical Society. Dr. Wilson is a native of Basking Ridge, New Jersey, received his preliminary education at Dickinson College and his M.D. degree at Temple University in 1950. He specializes in general practice.

Ray J. Wolff, M.D., 4652 Maryland Avenue, St. Louis, has become a member of St. Louis Medical Society. Dr. Wolff is a native of St. Louis, received his preliminary education at Dartmouth University and his M.D. degree at Washington University in 1958. He specializes in obstetrics and gynecology.

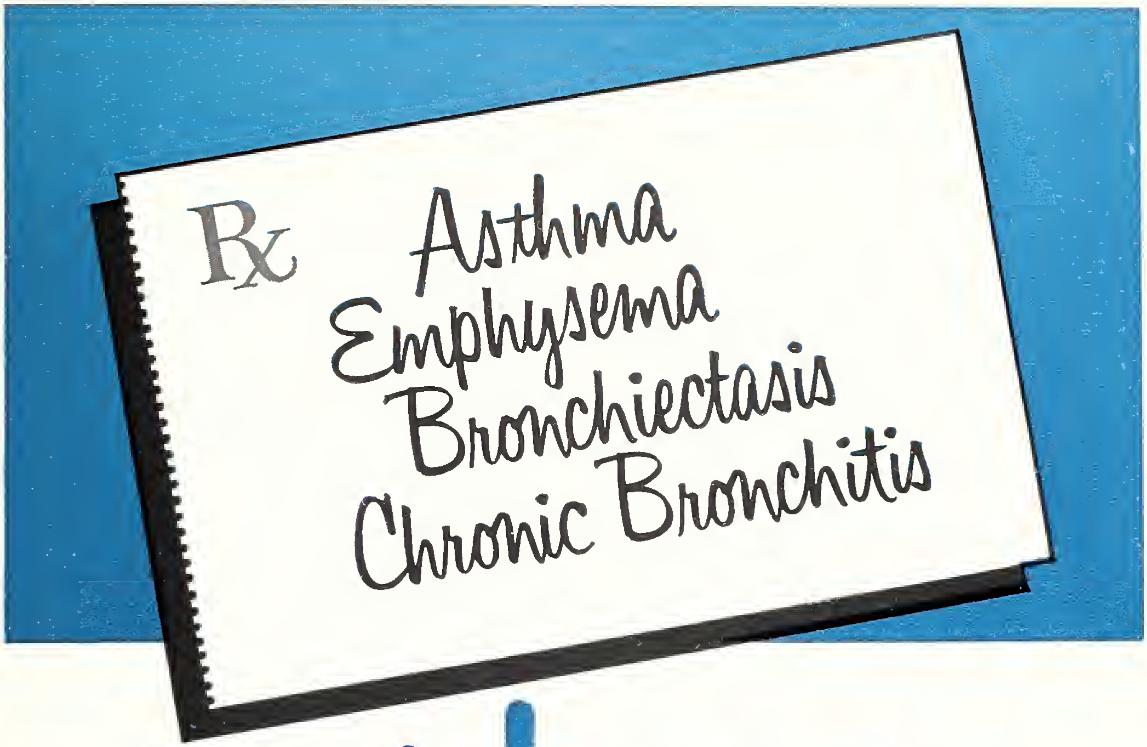
In Memoriam

Meluney, Soloman E., M.D., St. Joseph, a graduate of Ensworth Medical College, 1914; member of Buchanan County Medical Society; aged 81; died September 19, 1965.

Foster, Leon, M.D., University City, a graduate of the University of Georgia, 1933; member of St. Louis Medical Society; aged 56; died September 28, 1965.

Backlar, Joseph, M.D., Los Angeles, California, a graduate of St. Louis University, 1923; member of St. Louis County Medical Society; aged 69; died October 1, 1965.

Jones, George H., M.D., Kansas City, a graduate of the University of Kansas City, member of Jackson County Medical Society; aged 81; died October 7, 1965.



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Missouri Academy of General Practice

R. Stacy Long, M.D., Kansas City, was elected President-Elect of the Missouri Academy of General Practice at the organization's 17th Annual Scientific Assembly at the Sheraton-Jefferson Hotel in St. Louis. He will take office as President of the 600 member association of family physicians in 1966.

A native of Warrensburg, Dr. Long attended Central Missouri State College and the University of Arkansas School of Medicine, where he received the M.D. degree in 1947. He interned at Research Hospital in Kansas City. He is a Commander in the Medical Corps, U.S.N.R., and a past-president of the Kansas City Academy of General Practice.

Other officers of the Academy who were elected during the annual meeting include: Walter C. Gray, M.D., St. Louis, Vice President; Ben H. Koon, M.D., Bolivar, Vernon E. Michael, M.D., St. Louis, and Walter J. Stelmach, M.D., Kansas City, three year terms on the Board of Directors; and Raymond G. Elliott, M.D., Kansas City, a one-year term on the Board replacing Dr. Long. Doyle C. McCraw, M.D., Bolivar, outgoing President, becomes Chairman of the Board. John T. Crowe, M.D., Cape Girardeau, continues as Secretary-Treasurer and a Board member.

Dr. Doyle C. McCraw (r), the outgoing President of MAGP, presents the Academy's 1965 award for Outstanding Leadership in the Improvement of Health Care in Missouri to Mr. Raymond McIntyre of St. Louis (l). Mr. McIntyre has been associated with the state Academy since its founding in 1948.

Congratulations are in order as Dr. Doyle C. McCraw of Bolivar (l) performs his last official act as MAGP President, passing the symbolic gavel to his successor, Dr. Charles A. Nester of St. Louis (r).

Elected Delegates to the American Academy of General Practice were Walter T. Gunn, M.D., St. Louis, and C. Gordon Stauffacher, M.D., Sedalia. Charles A. Nester, M.D., St. Louis, and Edson C. Carrier, M.D., Kansas City, were elected Alternate Delegates to the national association.

All officers except the President-Elect take office immediately for the 1965-66 terms.

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Charles A. Nester, M.D., St. Louis, was installed as President of the Missouri Academy for the coming year. Dr. Nester, director of the department of general practice at St. Anthony's Hospital in St. Louis, is immediate past-president of the St. Louis Academy of General Practice.

During the installation banquet, Mr. Raymond McIntyre, St. Louis, was awarded the Academy's 1965 award for outstanding leadership in the improvement of health care in Missouri. Mr. McIntyre, recently appointed Executive Secretary of the Missouri State Medical Association, has also been Executive Secretary of the state General Practice Academy, having been associated with the organization since its founding in 1948. A native of Oregon, Missouri, he is a graduate of Central College, Fayette, and received a master's degree from the University of Missouri. He helped organize the Missouri Health Council and served as its Chairman in 1949-50 and again in 1962-63.

Dr. R. Stacy Long of Kansas City (l), who was named President-Elect of the Missouri Academy of General Practice, poses with Dr. Charles A. Nester of St. Louis (r), who was installed as the 1965-66 President of the organization.

About 200 Missouri family physicians attended the postgraduate instruction sessions on chest disease, obstetrics, heart disease, pediatrics and general medicine which were presented during the meeting by outstanding medical scientists from throughout the United States.

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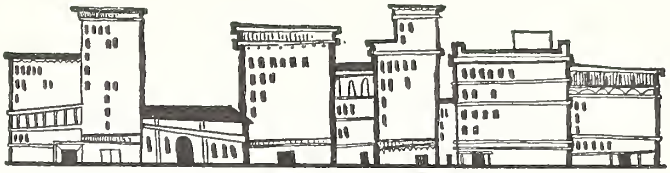
From the Medical Schools



MISSOURI UNIVERSITY

Dr. William C. Allen has been appointed to the newly created position of assistant medical director of the Medical Center. In this new post he will be concerned primarily with problems of patient-physician relations. He will have teaching responsibilities, also, as assistant professor in the Department of Community Health and Medical Practice. Doctor Allen was formerly Director of the Section of Chronic Diseases in the Missouri Division of Health.

Dr. Henry K. Silberman has been named an associate professor of psychiatry. He also has been appointed clinical director of the Mid-Missouri Mental Health Center, now under construction by the State Division of Mental Diseases on a site adjoining University Medical Center in Columbia.

Doctor Silberman served as Chief of Psychiatry Service at Walter Reed Hospital in Washington, D. C. from 1962 until his retirement from military service in August of this year, and he recently was awarded the Legion of Merit for exceptional contributions while in government service.

Dr. Marion S. DeWeese has been installed as the W. Alton Jones Distinguished Professor of Surgery. He will occupy the academic chair provided by a $105,000 endowment from the W. Alton Jones Foundation of New York.

Dr. Calvin W. Woodruff has been named professor of pediatrics. His appointment will be supported in part by a grant from the Williams-Waterman Foundation. In addition to his teaching responsibilities in pediatrics, Dr. Woodruff will review present teaching methods in nutrition and metabolism. This appointment establishes one of the first full time professorships in nutrition and metabolism in a clinical department of a school of medicine. Doctor Woodruff has contributed extensively to knowledge of infant nutrition and particularly to the treatment of iron deficiency anemia and megaloblastic anemia in infants.

Dr. Ernest McCoy, associate professor of pediatrics at the University of Missouri, has received a Career Development Award from the National Institutes of Health. His major research interests relate to metabolic defects associated with mental retardation.

ST. LOUIS UNIVERSITY

Dr. Edward A. Doisy, Nobel Laureate, was honored by the St. Louis University School of Medicine upon his retirement as distinguished service professor and director of the Edward A. Doisy Department. The event was marked by a day-long scientific symposium entitled "Biochemistry '23-'65," and four other Nobel prize winning scientists took part in the program. The visiting Nobel Laureates were among 12 guest lecturers, seven of whom were biochemists who earned their doctoral degrees under Dr. Doisy's direction.

Continued support of a study of the performance of transplanted hearts has been given by a grant of $211,429 from The John A. Hartford Foundation, Inc. of New York to the Firmin Desloge Hospital of St. Louis University. The three year program of investigating normal, diseased and transplanted hearts is under the direction of Dr. C. Rollins Hanlon, professor and chairman of the department of surgery. It renews a previous grant of $272,100 awarded in 1962, under which a team of investigators including Dr. Theodore A. Copper and Dr. Vallee Willman, professors of surgery at the School of Medicine, determined that transplanted hearts in animals show certain functional abnormalities despite which they can adequately support life.

Dr. Maurice Green, director of the Molecular Virology Institute, has disclosed that 31 different types of adenoviruses have now been isolated in highly purified form in laboratories at the Institute. Three of these types are known to produce cancer in hamsters within a month, and five of them produce tumors within a year. Doctor Green predicted that still two other strains now being studied at the Institute would be found to be cancer producing based on biochemical studies suggesting they might be tumorigenic.

WASHINGTON UNIVERSITY

Dr. Neal S. Bricker, professor of medicine, has been elected chairman of the Scientific Advisory Board of the National Kidney Foundation. Dr. Bricker is head of the school's renal division, which recently initiated a large multi-disciplinary research project on the kidney.

Dr. Sven G. Eliasson, associate professor of neurology, has received the Bond Award Gold Medal of the American Oil Chemist's Society for research on the metabolism of a complex carbohydrate-fat substance in experimental neurological disease. A member of the faculty since 1964, Doctor Eliasson received his M.D. and Ph.D. degrees from the University of Lund, Sweden.

Dr. John E. Hobbs, professor of clinical obstetrics and gynecology, was honored for 34 years' service as head of the gynecological pathology division at St. Louis Maternity Hospital.

Dr. David Kipnis, professor of medicine, has been elected President of the Washington University Medical Society. Dr. John Josse, professor and head of the department of physiology, was named Vice President. Dr. Adolph Cohen, research associate professor of ophthalmology and research assistant professor of anatomy, was reelected Secretary.

County Society News

FIRST DISTRICT

COUNCILOR
JOSEPH FISHER, M.D., ST. JOSEPH

Buchanan County Medical Society

The annual election meeting of the Buchanan County Medical Society was held following a dinner on the evening of October 6. Forty-five members attended. Dr. Herbert C. Senne, President, presided. Officers elected were: Irwin I. Rosenthal, M.D., President-Elect; Berwyn H. Moen, M.D., Vice President; John L. Mothershead, M.D., Secretary; Robert W. Kieber, M.D., Treasurer for his 11th consecutive term; Scott C. Benson, M.D., Censor; Ernest E. Wadlow, M.D., MSMA Delegate; Thompson E. Potter, M.D. and Richard V. Riddell, M.D., Alternate Delegates; Henry C. Willumsen, M.D., Committee on Public Policy; Clement C. DuMont, M.D., Trustee to 1971; Dr. Senne, Executive Secretary Committee. The newly elected officers, with Dr. William Redmond, President-Elect for the past year, will be installed at the annual meeting of the Society in December.

Mr. Tom Collins, assistant director of Kansas City Blue Cross-Blue Shield, was present and discussed Blue Shield's "Test of Performance" project and the current status of Blue Cross-Blue Shield.

Berwyn H. Moen, M.D., *Secretary*

Grand River Medical Society

Thirty-four members and guests of the Grand River Medical Society and Auxiliary met in Chillicothe on October 14, for the regular monthly meeting.

Dr. John Landor, Associate Professor of Surgery, University of Missouri School of Medicine discussed the pathophysiology and management of "Duodenal and Gastric Ulcer," including recent advances in this field.

At the business meeting the following officers were elected for 1966: Dr. Joseph Gale, President; Dr. Glennon Horner, First Vice President; Dr. William Fair, Second Vice President; Dr. Jack Vinyard, Chairman of the Program Committee; and Dr. Albert Cross, Secretary-Treasurer.

The Society voted to maintain the local dues at $5.00 per member for 1966.

Albert D. Cross, M.D., *Secretary*

SIXTH DISTRICT

COUNCILOR
ROLLA B. WRAY, M.D., NEVADA

West Central Missouri Medical Society

The October meeting of the West Central Missouri Medical Society was held in Butler on the evening of October 14. Twenty-five members and guests attended. There was a social hour and dinner preceding the formal meeting of the Society.

The meeting was called to order by Dr. R. H. Brownsberger, Vice President. The scientific portion of the program was presented by Dr. David Ginder, Department of Medicine, University of Missouri. The program consisted of a

(Continued on page 1028)

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Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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County Society News (con't.)

case presentation and very excellent discussion of possible diagnoses and laboratory procedures in a case of gastroenteritis. This discussion was well received by all present.

Following the scientific program the business session of the Society was called to order. Minutes of the previous meeting were read and approved. The correspondence received by the Secretary was presented to the Society. The matter of listing in the ten-county directory sponsored by the Jackson County Medical Society was presented. It was moved by Dr. O. B. Barger that the West Central Missouri Medical Society purchase a listing in this directory. The motion was unanimously carried. The Program Committee reported that the next meeting would be held at El Dorado Springs and reminded the Society that the time of the meeting had been changed from November 11 to November 4. Dr. Paul Barone, speaking for the Mental Health Committee, announced an addition to the staff of State Hospital No. 3 to provide a more complete outpatient service. He also reminded the members of the program of alcholism which would be presented at the State Hospital on October 28. He urged the members to attend. Dr. Barger reported that the Credentials Committee had approved the application of Dr. Raymond Yadon for membership in the Society. The report of the Committee was accepted and Dr. Yadon's application was unanimously approved.

The report of the Nominating Committee was presented by Dr. Barger. The recommendations for 1966 officers were: President, Dr. Robert Magee, El Dorado Springs; Vice President, Dr. Douglas Ronald, Butler; Secretary-Treasurer, Dr. Roy W. Pearse, Jr., Nevada.

Delegates and alternates to the House of Delegates are as follows: Bates County Delegate, Dr. Arthur Hansen and Alternate, Dr. William Haynie, both of Butler; Cass County Delegate, Dr. O. B. Barger, Harrisonville and Alternate, Dr. Herbert Tracy, Belton; Cedar County Delegate, Dr. Robert Magee and Alternate, Dr. Worley K. Stewart, both of El Dorado Springs; St. Clair County Delegate, Dr. Donald Giesler, Osceola and Alternate, Dr. Robert Brownsberger, Appleton City; Vernon County Delegate, Dr. James J. Pascoe and Alternate, Dr. William H. Allen, both of Nevada.

On motion of Dr. Barger and seconded by Dr. Pearse the report of the Committee was accepted. The chairman called for nominations from the floor. There being none, on motion of Dr. Barger and seconded by Dr. Pearse, the nominations were closed and the Secretary was instructed to cast a unanimous ballot for the candidates proposed by the Nominating Committee. There being no further business, the meeting was adjourned.

Roy W. Pearse, Jr., M.D., *Secretary*

TENTH DISTRICT

COUNCILOR
W. D. ENGLISH, M.D., CARDWELL

Mineral Area Medical Society

The Mineral Area Medical Society met October 28 in Farmington, and heard a lecture and some case presentations by Dr. James C. Vest of the Department of Thoracic Surgery of the St. Louis University Medical School, on "Present Trends in Diagnosis and Treatment of Carcinoma of the Lungs."

Those attending were Retus Osborn, M.D., Gaston Magrinat, M.D., Tom R. Burcham, M.D., A. G. Karraker, M.D., C. H. Appleberry, M.D., Kirby Turner, M.D., Jack Mullen, M.D., Tulio Estrada, M.D., Jose Jimenez, M.D., Emmett Hoctor, M.D., C. E. Michaelis, M.D. and C. W. Chastain, M.D.

The business meeting opened with an announcement that next month's meeting would be held on November 4 with the lawyers of the 24th Judicial Circuit and would be a dinner meeting. The motion was made, seconded and approved unanimously that the price of the dinner be paid for from Society funds, insofar as the M.D.'s attending the meeting were concerned.

It was moved, seconded and approved unanimously that Blue Shield would be the preferable intermediary to handle the Medicare program.

No action was taken on a proposal that the 10th Councilor District maintain a hospitality room at the State Medical Convention.

Election for officers for the 1966 calendar year was the next item for business. C. W. Chastain was nominated and elected President without opposition. John Hunt was nominated and elected Vice President. C. E. Michaelis was nominated and elected Secretary.

Drs. Osborn, Appleberry and Magrinat then discussed proposals for improved communications between the State Hospital at Farmington and local physicians concerning the treatment and disposition of patients referred to the Hospital. The members indicated that they would prefer a letter informing them of a patient's discharge.

The meeting adjourned at 9:45.

C. W. Chastain, M.D., *Secretary*

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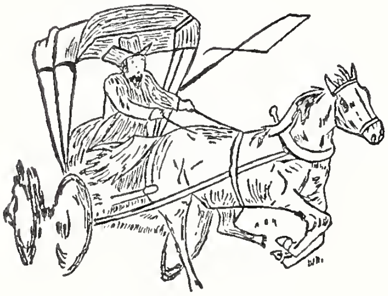
Missouri Medicine in Review



FORTY YEARS AGO

The St. Louis City Sanitarium has openings for several interns, the position paying $85.00 per month with full maintenance. The Sanitarium is the hospital for the care of the insane maintained by the City of St. Louis.—Dr. Lindsay S. Milne and Miss Marian Young, both of Kansas City, will be married on December 15, in the Second Presbyterian Church in that city. Drs. Sam Roberts, J. Milton Singleton, Charles C. Denine and Rex Diveley will serve as groomsmen.

The National Board of Medical Examiners has announced that two additional states, Connecticut and Utah, have notified the Board that they will accept the Board's certificates as qualifying physicians to practice medicine in those states. At the June examinations held by the Board, a total of 508 persons were examined. Examinations were held in 30 medical schools throughout the country, including Washington University. Of those who took the examinations, LeRoy Goodman of Kansas City, a student at Harvard University Medical School, made a grade of 383.5, the third highest of the class examined. Herman E. Pearse, Jr., of Kansas City, also a student at Harvard University Medical School, was fifth in the class taking the Part II examination which covers the third and fourth years in medicine, making a grade of 200.2.

TWENTY-FIVE YEARS AGO

Dr. James R. McVay of Kansas City has been elected president of the Frisco Surgical Society. The society will hold its 1941 meeting in Kansas City.—The midyear board meeting of the American Medical Women's Association will be held at the Hertzler Clinic in Halstead, Kansas. Dr. Irene A. Koeneke, Halstead, will be hostess.—Dr. G. D. Royston of St. Louis was elected President-Elect of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at the annual session of the society held in Excelsior Springs. Dr. Royston served as vice president in 1929.

The Council of the Missouri State Medical Association has received the report of the Treasurer, Dr. R. L. Thompson of St. Louis, which indicated a cash balance of $12,335.05, as of October 14, 1940. The report of the Treasurer pointed out that Post Office regulations applying to the mailing of MISSOURI MEDICINE require payment of dues which include subscription to the journal and that the names of delinquent members must be removed from the mailing list until the dues are paid. The Council authorized the Treasurer and the Editor of the journal to notify delinquent members accordingly.

TEN YEARS AGO

The St. Louis Physicians Orchestra, under the direction of Mr. Edward Ormond of the St. Louis Symphony Orchestra, will present a concert at the Medical Society Building on December 5 at 8:30 p.m.—During the Mississippi County Fair, one day was set aside as the "Drs. Martin Day." A. J. Martin, M.D., and S. P. Martin, M.D., East Prairie, brothers who have both practiced for more than 50 years, were honored. At the reception in the evening they were each presented a plaque expressing the appreciation of their fellow citizens.

At the 60th annual meeting of the American Academy of Ophthalmology and Otolaryngology held in Chicago, M. Hayward Post, M.D. of St. Louis was elected a vice president.—Among alumni in attendance at a reunion of the University Medical College, Kansas City, was G. Wilse Robinson, Sr., M.D., who taught physiology in the school from 1903 to 1913.—New officers of the medical staff of Deaconess Hospital in St. Louis are: Clarence E. Mueller, M.D., President; Edward M. Cannon, M.D., Vice President; and Birkle Eck, M.D., Secretary-Treasurer.

Constitution and By-Laws

of the

Missouri State Medical Association

Adopted 1903

1965 Revision

634 N. GRAND BLVD. ST. LOUIS, MO. 63103

Constitution

Article I. Name of the Association

The name and title of this organization shall be the Missouri State Medical Association.

Article II. Purpose

The purpose of this Association is the promotion of the science and art of medicine, the protection of public health, the betterment of the medical profession, and, by uniting with similar organizations in other states and territories of the United States, to form the American Medical Association.

Article III. Membership

Membership in this Association shall be limited to and include all members in good standing in component societies which hold charters from this Association.

Article IV. House of Delegates

The House of Delegates shall be the legislative body of this Association and shall consist of delegates elected by the component societies. It shall elect a Speaker and Vice Speaker from its body. Its Secretary shall be the Secretary of the Missouri State Medical Association.

Article V. Council

The Council shall be the executive body of this Association when the House of Delegates is not in session. It shall be the judicial body of the Association when matters are referred to it for decision by the Association, by component societies or by individual members thereof. It shall consist of the President, President-Elect, Secretary, Treasurer and the duly elected Councilors from each Councilor District. Nine members shall constitute a quorum.

Article VI. Sessions and Meetings

Section 1. The Association shall hold an Annual Session at a place fixed by the House of Delegates, the time of which shall be fixed by the Council.

Sec. 2. Special meetings of the Association or of the House of Delegates may be called by a two thirds vote of the Council and shall be called upon a petition signed by members equal in number to one third of the total number of delegates certified for the last Annual Session.

Article VII. Officers

Section 1. The officers of this Association shall be a President, a President-Elect, three Vice Presidents, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates and ten Councilors selected as provided for.

Sec. 2. All officers except Councilors shall be elected annually. The terms of Councilors shall be two years. Half of the membership of the Council shall be elected each year. The Secretary and the Treasurer shall be elected by the Council. The delegates present from each Councilor District shall meet prior to the last day of the Annual Session and elect the Councilor from that district. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. All of the officers shall serve until their successors are elected and installed.

Article VIII. Funds, Expenses and Budget

Funds shall be raised by a per capita assessment on each component society. The amount of the assessment shall be fixed by the House of Delegates. Funds may also be raised in any other manner approved by the House of Delegates. The Council shall submit an annual budget to the House of Delegates. All resolutions providing for appropriations shall be referred to the Council and all appropriations approved by the Council shall be included in the annual budget.

Article IX. Referendum

At any General Meeting of the Association it may, by a two thirds vote, order a general referendum upon any question pending before the House of Delegates. The House of Delegates may, by a vote of its members, submit any question to the membership of the Association for its vote. A majority vote of all members of the Association shall determine the question.

Article X. Seal

The Association shall have a common seal. The power to change or renew the seal shall rest with the House of Delegates.

Article XI. Amendments

The House of Delegates may amend any article of this Constitution by a two thirds vote of the delegates present and voting at any Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session and that it shall have been published twice during the year in the Journal of this Association or sent officially to each component society at least two months prior to the meeting at which final action is to be taken.

By-Laws

CHAPTER I. MEMBERSHIP

Section 1. Members of this Association shall be physicians whose names have been certified by secretaries of component societies to the Secretary of this Association that they are duly elected members of a component society and are legally qualified physicians practicing in Missouri except as otherwise provided. Each member must be a citizen of the United States, of good moral and professional standing, and must not support, nor practice, nor claim to practice any exclusive system of medicine.

Sec. 2. No person who is under sentence of suspension or expulsion from any component society of this Association or whose name has been dropped from its roll of members shall be entitled to any of the rights or benefits of this Association.

Sec. 3. There shall be three classes of members as follow:

Active members shall be limited to those members of component societies who (1) hold the degree of Doctor of Medicine or Bachelor of Medicine, and (2) are entitled to exercise the rights of active membership in their component societies, as determined by their component societies, subject to the provisions of these By-laws.

Junior members shall be limited to those members of component societies (1) who are serving a full time internship or residency in a hospital approved by the Council on Medical Education of A.M.A., (2) and they shall continue as junior members for the first three years subsequent to the completion of accredited service.

Honor members shall be limited to Honor members of component societies, which societies have requested that active members who have reached advanced years and have long served the Association and the profession be made Honor members of the Association. They shall enjoy all the privileges of active membership and shall be exempt from the payment of dues.

Sec. 4. **Associate members** shall be limited to persons not provided for in the various classes of membership who are engaged in the pursuit of a medical or allied science, and by action of the component societies, become Associate members of the Association. This shall include physicians who meet medical examiners' qualifications but have not received their citizenship, these Associate members to apply for Active membership within one year after citizenship is granted. Associate members shall have the right to attend scientific sessions and such other privileges as may be extended to them by the House of Delegates. They shall not be eligible to vote and shall be exempt from the payment of dues.

CHAPTER II. GENERAL MEETINGS

Section 1. The General Meetings shall be open to all registered members and guests.

Sec. 2. All papers read before this Association shall be its property. Each paper, when it has been read, shall be deposited with the Secretary. Authors of papers read before this Association shall not cause them to be published elsewhere until after they have been published in its Journal.

Sec. 3. No person in the active practice of medicine in the State of Missouri shall appear on the program of the Association unless he or she is a member of the Missouri State Medical Association or an affiliated association or organization.

CHAPTER III. HOUSE OF DELEGATES

Section 1. The House of Delegates shall meet annually at the time and place of the Annual Session. It shall remain in continuous session on the first day of the Annual Session and complete the work coming before it at that session. It shall meet on the last day of the Annual Session to receive the report of the Nominating Committee and complete unfinished business and the election of officers. No new business shall be introduced at the last session without the unanimous consent of the delegates.

Sec. 2. Each component county society shall be entitled to send each year one delegate or one alternate to the House of Delegates for each fifty full paid members or fraction thereof in the Association on December 31 of the previous year; provided, however, that each component society which is composed of two or more county societies shall be entitled to at least one delegate or one alternate from each of the counties of which it is composed; however, such delegates or alternates must reside in the county they represent.

Sec. 3. Forty delegates shall constitute a quorum of the House of Delegates. All meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. From among members of the House of Delegates the Speaker shall appoint reference committees to which reports and resolutions, on a majority vote of the House of Delegates, shall be referred as follows:

Reference Committee on Amendments to the Constitution and By-laws.

Reference Committee on Resolutions.

Reference Committee on Miscellaneous Affairs.

Reference Committee on Medical Education and Public Welfare.

Reference Committee on Reports of Officers.

The Speaker may appoint such other reference committees as he may deem necessary, upon approval of the House of Delegates.

The President shall appoint a Committee on Credentials.

Sec. 5. The House of Delegates shall elect delegates and alternates to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body.

Sec. 6. The House of Delegates shall divide the state into Councilor Districts specifying what counties each district shall include and, when the best interest of the Association and the profession will be promoted thereby, organize in each a district medical society of which all members of the component county societies shall be members.

Sec. 7. The House of Delegates shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates. Such committees shall report to the House of Delegates and may be present and participate in the debate on their reports.

Sec. 8. The House of Delegates shall receive and act upon a complete and detailed annual audit of receipts and expenses of the preceding year and a proposed budget for the current calendar year which shall have been prepared by the Council and submitted to the component county societies at least four weeks prior to the Annual Session. These shall be published in the Journal.

Sec. 9. The following shall be the general order of business of the House of Delegates for the first meeting of the session:

1. Call to order by the Speaker.
2. Report of the Committee on Credentials.
3. Roll call.
4. Reading and adoption of minutes.
5. Report of officers.
6. Report of committees.
7. Unfinished business.
8. New business.

The following shall be the general order of business of the House of Delegates for the last meeting of the session:

1. Call to order by the Speaker.
2. Report of the Committee on Credentials.
3. Roll call.
4. Reading and adoption of minutes.
5. Report of the Nominating Committee.
6. Election of officers.
7. Reports of officers.
8. Reports of committees.
9. Unfinished business.
10. New business (see Sec. 1, Chap. III).
11. Installation of officers.
12. President's appointments and installation of members to committees.
13. Selection of the place for the next Annual Session.

At any meeting of the House of Delegates, the order of business may be changed by a two thirds affirmative vote of the members present and voting.

CHAPTER IV. ELECTION OF OFFICERS

Section 1. The President on the first day of the Annual Session shall select a Committee on Nominations consisting of ten delegates, no two of whom shall be from the same Councilor District. The Committee on Nominations shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for each of the offices listed in Article VII of the Constitution which are to be filled at that Annual Session excepting the President-Elect who shall be nominated from the floor of the House of Delegates.

Sec. 2. All elections of officers shall be by acclamation unless ballot is called for. A majority of the votes cast shall be necessary to elect except for delegates and alternates to the American Medical Association, who shall be elected as follows:

In case no delegates or alternates for the American Medical Association receive on the first ballot a majority of the votes, the nominees shall be declared elected in the order of the highest number of votes received until the allotted number shall have been chosen. In case of a tie vote for delegate or alternate, the tie shall be determined by lot.

In case no nominee for general offices of the Association (see Article VII, Constitution) receives a majority of the votes on the first ballot, the nominee receiving the lowest number of votes shall be dropped and a new ballot taken. This procedure shall be continued until one of the nominees receives a majority of all the votes cast, when he shall be declared elected.

Sec. 3. Nothing in this chapter shall be construed to prevent additional nominations being made from the floor by members of the House of Delegates.

Sec. 4. Delegates present at the Annual Session from Councilor Districts whose Councilors' terms expire shall hold meetings on or before the morning of the last day of the Annual Session and elect a Councilor for their District for a term of two years. The name of the elected Councilor shall be given on a prescribed form to the Secretary for presentation to the House of Delegates. Each candidate for Councilor must reside or practice in the district for which he is elected.

Sec. 5. The Speaker and Vice Speaker shall not serve more than three consecutive terms.

Sec. 6. The Speaker shall appoint a parliamentarian to serve as such during the session of the House of Delegates at each Annual Session and upon whom the Speaker may call before deciding points of order or procedure.

CHAPTER V. DUTIES OF OFFICERS

Section 1. The **President,** or his designated representative, shall preside at all scientific sessions of the Association. He shall preside at the House of Delegates in the absence of the Speaker or Vice Speaker and until their successors are elected. He shall appoint all committees not otherwise provided for. He shall deliver an annual address at such time as may be arranged and shall perform such other duties as custom or parliamentary usage requires. He shall be the real head of the profession of the state and assist the Councilors in building up the county societies and in making their work more practical and useful.

Sec. 2. The **President** and the **President-Elect** shall be members of the Council and shall attend all meetings of the Council. Should the office of President-Elect become vacant through death or otherwise the Council may fill the vacancy until the next Annual Session of the Association.

Sec. 3. The **Vice Presidents** shall assist the President in the discharge of his duties. In the event of the death, resignation or removal of the President the Council shall select one of the Vice Presidents to serve the unexpired term.

Sec. 4. The **Treasurer** shall give bond in the sum of $20,000. He shall demand and receive all funds due the Association, together with bequests and donations. He shall pay money out of the treasury only on a written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his actions and of the state of the funds in his hands.

Sec. 5. The **Secretary** shall attend the General Meetings of the Association and the meetings of the House of Delegates, and shall keep minutes of their respective proceedings in separate record books. He shall be Secretary of the Council and shall keep a record of its proceedings. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer, and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Session. He shall, with the cooperation of the secretaries of the component societies, keep a card index register of all the legal practitioners of the state by counties, noting on each his status in relation to his county society, and shall transmit a copy of this list to the American Medical Association, transmitting to its Secretary each month a report containing the names of new members and the names of those dropped from the membership roster during the preceding month. He shall conduct the official correspondence, notifying members of meetings, officers of their election and committees of their appointment and duties. He shall employ such assistants as may be ordered by the Council and shall make an annual report to the House of Delegates. He shall supply all component societies with the necessary blanks for making their reports and shall collect from them the regular per capita dues and assessments and turn the same over to the Treasurer. The amount of his salary shall be fixed by the Council.

CHAPTER VI. COUNCIL

Section 1. The Council shall meet during the Annual Session at such times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the Annual Session to organize. The Council shall elect a Chairman and a Vice Chairman for a term of one year. The Chairman may be reelected to serve not more than four consecutive terms of one year each. The Council shall, through its Chairman, make an annual report to the House of Delegates.

Sec. 2. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exists, for inquiring into the condition of the profession, and to keep in touch with the activities of and to aid in the betterment of the component societies of his district. He shall make reports of his work and the condition of the profession of each county in his district to the Council. The necessary traveling expenses incurred by each Councilor in the line of duties herein imposed may be allowed on a proper itemized statement submitted monthly and within the current year, but this shall not include his expense in attending the Annual Session of the Association. No Councilor shall be eligible for the position of Delegate to the House of Delegates during his term of office as Councilor, nor shall he vote in the House of Delegates.

Sec. 3. The Council shall be the executive body of the House of Delegates and between sessions shall exercise the power conferred on the House of Delegates by the Constitution and By-laws.

Sec. 4. The District Councilor together with two members of component societies within the Council District, selected by the Councilor, shall serve as a Board to hear and by a majority vote adjudicate any questions involving the right and standing of members, either in relation to other members or to component societies or to the Association, and all matters of discipline affecting the conduct of members of component societies, or other matters.

The Council shall be the appellate Board of Censors of the Association. It shall hear and adjudicate all matters on appeal from the decision of the Councilor Board; it shall hear and adjudicate matters of an ethical nature brought before the House of Delegates or the general meeting which shall be referred to the Council without discussion. On original decision or appellate determination, its decision shall be final unless appealed to the then convened meeting or the next meeting of the House of Delegates.

Sec. 5. Charters shall be issued to county societies only on approval of the Council, and shall be signed by the President and Secretary of this Association. Upon the recommendation of the Council, the House of Delegates may revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-laws.

Sec. 6. In sparsely settled sections the Council shall have authority to organize the physicians of two or more counties into societies, to be suitably designed so as to distinguish them from district societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Sec. 7. The Council shall provide for and supervise the issuance of all publications of the Association including proceedings, transactions and memoirs, and shall have authority to appoint an Editor and such assistants as it deems necessary. It shall prescribe the methods of accounting and through a committee of three of its members, to be known as a Committee on Auditing and Appropriations, shall audit all accounts of this Association. The Council shall adopt an annual budget providing for the necessary expenses of the Association for the following calendar year. This budget shall be prepared and presented for consideration in the last quarter of each year by the Committee on Auditing and Appropriations. A complete and detailed report shall be submitted to the component county medical societies as provided in Section 8, Chapter III. The Council shall submit an annual report of the House of Delegates which shall specify the character and cost of the publications of the Association, the amount and character of all its property, and shall provide full information concerning the management of all affairs of the Association which the Council is charged to administer.

Sec. 8. The Council shall appoint at least six months before the Annual Session, a committee consisting of three of its members to be known as the Committee on Arrangements for the Annual Session. On recommendation of the Committee, the Council shall appoint a general chairman of a Local Committee on Arrangements, who shall be a member of the component society of the county in which the Annual Session is to be held, and who shall appoint and organize from the members of this county society the personnel of the Local Committee on Arrangements. The Local Committee on Arrangements shall provide suitable meeting places and shall have general charge of all local arrangements subject to the approval of the Committee on Arrangements for the Annual Session. All receipts and disbursements related to the Annual Session shall be handled by the Committee on Arrangements on recommendations of the Committee on Budget and Appropriations.

Sec. 9. The Council shall by appointment fill any vacancy in office not otherwise provided for which may occur during the interval between Annual Sessions of the House of Delegates; the appointee shall serve until his successor has been elected and has qualified.

Sec. 10. The salaries of all employees of the Association shall be fixed by the Council.

Sec. 11. The Council shall provide such headquarters for the Association as may be required to conduct its business properly.

Sec. 12. The Council shall be empowered to elect an Executive Secretary and Assistant Executive Secretary and such other personnel as may be necessary, who need not be members of the Missouri State Medical Association, each of whom shall perform such duties as the Council may designate and receive such salary and serve for such periods and under such conditions as the Council may determine.

CHAPTER VII. COMMITTEES

Section 1. The Committees of the Association shall be standing committees and special committees.

Sec. 2. The standing committees, unless otherwise provided in these By-laws, shall consist of five members serving three year terms and shall be:

A Committee on Scientific and Postgraduate Work.

A Committee on Publication.

A Committee on Medical Defense.

A Committee on Medical Education and Hospitals.

A Committee on Medical Economics.

A Committee on Cancer.

A Committee on Maternal Welfare.

A Committee on Infant and Child Care.

A Committee on Mental Health.

A Committee on Constitution and By-laws.

A Committee on Control of Venereal Disease.

A Committee on Trauma.

A Committee on Eye Health.

A Committee on Diabetes Mellitus.

A Committee on Anesthesiology.

A Committee on Laboratory Medicine.

A Committee on Disaster Medical Care and National Defense.

A Committee on Physical Medicine and Rehabilitation.

A Committee on Aging.

A Committee on Radiology and Ionizing Radiation.

A Committee on Public Service.

The Committee on **Scientific and Postgraduate Work** shall consist of three members, of which the Secretary shall be one, and shall determine the character and scope of the scientific proceedings of the Association for each Annual Session subject to the instructions of the House of Delegates. The Committee shall provide speakers for district society meetings as requested.

The Committee on **Publication** shall include the Editor or Acting Editor. The Committee shall be appointed by the Council annually. The chairman shall be designated by the Council. It shall have referred to it all reports on scientific subjects and all scientific papers and discussions heard before the Association. It shall be empowered to curtail, abstract or reject papers and discussions. It shall arrange for the publication and distribution of the Journal.

The Committee on **Medical Defense** shall, upon request accompanied by complete history of the case and copy of plaintiff's petition if filed, advise and aid any member in good standing who has had filed against him individually a civil malpractice suit and may recommend assistance in defraying costs to an amount not to exceed $300.00. The Association shall not be obligated to pay, nor shall it pay, either in whole or in part, any sum agreed upon in compromise, nor any judgment or part thereof, nor shall it pay any of the costs of taking depositions nor any court costs. No member shall be entitled to this defense should the charge of malpractice be brought jointly against him and a hospital or sanatorium in which he is, or at the time of the alleged malpractice, was financially interested.

The Committee on **Medical Education and Hospitals** shall serve in the state for the Council on Medical Education and Hospitals of the American Medical Association and shall have referred to it all questions pertaining to hospitals and medical education.

The Committee on **Medical Economics** shall investigate matters affecting the economic status of medicine and shall report annually to the House of Delegates such recommendations as may, in its judgment, seem proper.

The Committee on **Cancer** shall investigate the facilities provided for the care of the cancer sufferer and for the study of cancer in the State of Missouri and shall cooperate with the American Society for the Control of Cancer and other ethical organizations for cancer control to the end that authentic information in regard to diagnosis and treatment of cancer be properly disseminated throughout the State of Missouri.

The Committee on **Maternal Welfare** shall keep in touch with and investigate matters concerning maternal and child welfare. It shall carry on activities in the field of maternal and child welfare and in cooperation with the Committee on Scientific and Postgraduate Work and the Division of Child Hygiene of the State Division of Health shall conduct postgraduate courses for the profession and disseminate information of an educational nature.

The Committee on **Infant and Child Care** shall consist of ten members, one from each of the ten Councilor Districts, appointed annually by the President. The Committee shall concern itself with the betterment of infant and child care and shall be a liaison with the Bureau of Child Hygiene of the State Division of Health. The Committee shall study and make recommendations regarding various public, private and parochial school health programs in this state.

The Committee on **Mental Health** shall be composed of ten members not all of whom are specialists in psychiatry and shall engage in the promotion of good mental health, the prevention of mental ill health and lend its support toward securing cooperation of all state or governmental agencies in obtaining better treatment of the mentally ill. It shall cooperate with the Committee on Mental Health of the American Medical Association and with the Division of Mental Diseases of the State of Missouri.

The Committee on **Constitution and By-laws** shall propose such amendments to the Constitution and By-laws as are deemed wise and expedient, and bring before the House of Delegates such amendments as it or other members of the Association may present for consideration.

The Committee on **Control of Venereal Disease** shall review the available information on the venereal disease problem, assemble additional information concerning the nature and extent of the facilities which now exist for the diagnosis, recommend such supplemental and new state or local facilities and measures as seem desirable in dealing with these infections and to cooperate fully with the State Division of Health and the United States Public Health Service in carrying out such venereal disease programs as have been or may in the future be established.

The Committee on **Trauma** shall disseminate information regarding the current and approved methods of handling trauma and stimulate interest therein, such information to be disseminated to licensed practitioners of medicine and to lay groups approved by the Committee. It shall correlate its programs with those of the Committee on Scientific and Postgraduate Work. The chairman of the Committee shall have the right to appoint three junior members to work under his direction.

The Committee on **Eye Health** shall promote and maintain an educational program in each Councilor District, before medical and lay audiences, relative to ocular hygiene, conservation of eyesight and prevention of blindness. It shall correlate its program with that of the Committee on Scientific and Postgraduate Work and the local, state and national associations or societies for the prevention of blindness. The Committee may have associate members as the Committee may deem advisable.

The Committee on **Diabetes Mellitus** shall keep in touch with and investigate matters concerned with diabetes mellitus and carry out such activities as may be deemed appropriate.

The Committee on **Anesthesiology** shall study matters concerned with anesthesiology and carry out such activities as may be deemed appropriate.

The Committee on **Laboratory Medicine** shall study all matters pertaining to pathology including the following subdivisions: postmortem pathology, surgical pathology, exfoliative cytology, medical bacteriology, parasitology, virology, mycology, serology, hematology, chemistry, toxicology, clinical microscopy and blood banking. On the basis of such studies, the Committee shall report annually to the House of Delegates and to the Council whenever necessary and shall make such recommendations as may in its judgment seem proper.

The Committee on **Disaster Medical Care and National Defense** shall consist of ten members of the Association, appointed annually by the President, one from each of the ten Councilor Districts, and in addition, any other members who are interested in the medical aspects of disaster medical care and national defense. The Committee shall concern itself with the development of disaster medical care and national defense operations in the state and shall cooperate with public officials and private organizations in the furtherance of disaster medical care and national defense activities.

The Committee on **Physical Medicine and Rehabilitation** shall consider matters concerned with physical medicine and with rehabilitation, including vocational rehabilitation.

The Committee on **Aging** shall consider matters concerned with the problem of our aging population in relation to health care.

The Committee on **Radiology and Ionizing Radiation** shall consider matters concerned with radiology and ionizing radiation and shall disseminate information regarding the use of radiology and ionizing radiation to physicians and other interested groups in this state.

The Committee on **Public Service** shall concern itself with promoting good relations between the profession and the public, and to act to represent the Association in matters of public affairs. It shall cooperate with similar committees of the county medical societies in order to disseminate information to the public regarding the science and art of medicine and the protection of public health.

Sec. 3. Special committees may be appointed by the President or the Council as circumstances may demand.

CHAPTER VIII. DUES AND ASSESSMENTS

Section 1. (a) The annual dues of this Association shall be $42.50, which shall be applicable to each active member of the Association and shall be levied per capita on the active members of the component societies; the per capita levy for junior members shall be one half of the per capita levy for active members; honor and associate members shall not be required to pay dues. Dues shall be payable on January 1 of the year for which they are levied.

(b) An assessment of $7.50 per year on each Active member of the Association and $3.75 per year on each Junior member shall be applicable for a three-year period beginning in 1966. The assessment shall be payable with the dues of the Association, and the monies collected therefrom shall be remitted to the Missouri State Medical Foundation.

Sec. 2. One and one half dollars of the annual dues shall be credited to the account of the Journal for each member's annual subscription. The remainder of the amount shall be credited to the general fund of the Association.

Sec. 3. The House of Delegates may, when in its judgment the best interest of the Association demands, recommend an assessment on each active member. Such assessment shall be levied only by consent of two thirds of the members of the House of Delegates present and voting. Funds obtained from such special assessments shall be allocated only for the purposes for which such assessment is levied and in accordance with substantiating budgets. Unexpended balances from such assessments must be reported to the House of Delegates for re-allocation.

Sec. 4. The secretary of each component society shall cause to be collected and remitted to the Treasurer of this Association the per capita levies. Any member whose name has not been reported for enrollment and whose dues have not been remitted to the Treasurer of this Association on or before March 1 shall stand suspended until his name is properly reported and his dues for the current year are paid. On December 31 of each year, members delinquent in payment of dues, and assessment if such has been made, or any part thereof shall, ipso facto, forfeit their memberships. No suspended member shall be eligible to register at an annual session.

CHAPTER IX. RULES OF CONDUCT

The ethical principles governing the members of the American Medical Association shall govern members of this Association.

CHAPTER X. RULES OF ORDER

The deliberations of this Association shall be conducted in accordance with parliamentary usage as defined in *Robert's Rules of Order.*

CHAPTER XI. COUNTY SOCIETIES

Section 1. All county societies now in affiliation with the State Association or those that may hereafter be organized in this state, which have adopted principles of organization not in conflict with this Constitution and By-laws shall, upon application to the Council, receive charters from this Association, provided that their Constitutions and By-laws shall have been submitted to the Council and received its approval.

Sec. 2. Only one component medical society shall be chartered in each county.

Sec. 3. Each county society shall judge of the qualifications of its members, subject to review and final decision by the Council of the State Association. Every reputable and legally qualified physician who does not practice, nor profess to practice sectarian medicine, and who resides or practices in the same county, who shall apply for membership on the prescribed form and subscribe for the Journal and pay the annual dues and assessments for the current year, shall be eligible for election to membership.

A member of a component society whose license has been revoked shall be dropped from membership automatically as of the date of revocation. The Council of the State Association shall have final authority to expel a member should a component county society fail to do so after being so requested by the Council.

The Council may upon request of a component society remit the state dues and assessment of a member who has become totally and permanently incapacitated through mental or physical disability and has been a member in good standing during the three consecutive years immediately preceding his disability; provided, that the component society shall remit the county society dues of such member.

The Council may, upon request of a component society, remit the state dues and assessments of a deserving member, found to fall within what is classified as a hardship case, during the period of said hardship until such time as the dues again become payable; provided that the component society shall remit the county society dues of such member.

The Council may, upon the request of a component society, waive the dues of any member in good standing for such a period as the member is serving in the Armed Forces of the United States of America, or similar service with any of the allies of the United States, and for six months thereafter.

A physician living near a county line may hold his membership in that county most convenient for him to attend, on permission of the component society in whose jurisdiction he resides.

Sec. 4. Any physician who may feel aggrieved by the action of the society of his county in suspending or expelling him shall have the right to appeal to the Council whose decision shall be final. A county society shall at all times be permitted to appeal or refer questions involving membership to the Council of the State Association for final determination.

Sec. 5. In hearing appeals the Council may admit oral or written evidence or both as in its judgment will most fairly present the facts.

Sec. 6. When a member in good standing in a component county society moves to another county in this state, he shall be given a written certificate of these facts by the secretary of his society, without cost, for transmission to the secretary of the society in the county to which he moves. Pending his acceptance or rejection by the society in the county to which he moves such member shall be considered to be in good standing in the county society from which he was certified and in the State Association to the end of the period for which his dues have been paid.

A member of a component society who moves to and engages in the practice of medicine at a location in another county in which there is a component society shall forfeit his membership in this Association and the Secretary shall remove his name from the roster of members of the Missouri State Medical Association unless within one year after such change of residence he becomes a member of the component society in the county to which he has moved.

Sec. 7. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county. Systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it includes every eligible physician in the county.

Sec. 8. At some meeting in advance of the Annual Session of this Association, each component county society shall elect one or more delegates and an equal number of alternates therefor to represent it in the House of Delegates of this Association, in accordance with Chapter III, Section 2 of these By-laws. The secretary of each county society shall send a list of such delegates and alternates to the Secretary of this Association at least sixty days before the Annual Session. Representation in the House of Delegates shall be contingent on compliance with the foregoing provisions.

Sec. 9. The secretary of each county society shall keep a roster of its members and, if practicable, a list of non-affiliated physicians, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state, and such other information as may be deemed necessary by the Council. He shall send a copy of the program of each meeting to his district councilor and to the Secretary of the State Association.

Sec. 10. Any county component society, in a manner approved by the State Association, or the State Association with the consent of the county society or societies affected, may undertake, organize and put into effect plans for the medical care of indigent persons or indigent groups, and low income groups, by agreements with physicians, public officials or others and by the use of contributions, cooperative funds or other means; provided, however, that a free choice of the available and participating physicians in that territory shall be allowed to the patient and that all relationships, legal or otherwise, between the physician and the patient shall be and remain as though is were strictly an individual employment.

Chapter XII. Amendments

Section 1. These By-laws may be amended at any Annual Session by a two thirds vote of the delegates present and voting at that session, if the proposed amendment has been properly submitted to the House of Delegates and has laid on the table for one day.

Sec. 2. Upon the adoption of this Constitution and these By-laws all previous constitutions and by-laws are thereby repealed.

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